SEQUENCE LISTING

<110> LIPSCOMBE, Diane
       BELL, Thomas
       THALER, Christopher
       CASTIGLIONI, Andrew

<120> NOCICEPTIVE NEURON-SPECIFIC CALCIUM CHANNEL ISOFORM AND USES
       THEREOF

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<150> US 60/443,474
<151> 2003-01-29

<160> 47

<170> PatentIn version 3.2

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caggcacctg ccaggaccac tctcgggaca ccaagccaag ctccagagcc cagacactaa      9394

ctctagggtg ggagtgaccg taatatgctt ggccctgatc tgcccctcct catccccag       9453
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cg  cct ggt tcg aat gaa cat gcc cat atc caa tga gga cat gac ggt       9500
Ala Pro Gly Ser Asn Glu His Ala His Ile Gln     Gly His Asp Gly
                110             115                         120

aca ctt tac atc cac act gat ggc cct cat ccg gac ggc act gga gat       9548
Thr Leu Tyr Ile His Thr Asp Gly Pro His Pro Asp Gly Thr Gly Asp
                125             130                     135

caa gct tgc ccc ag                                                    9562
Gln Ala Cys Pro
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<212> DNA
<213> Rattus norvegicus

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tccatcctag ggccgcacca cctcgatgaa ttcattcgcg tctgggctga atacgaccca   120

gctgcgtgtt gccggattca ttataaggat atgtacagtt tgttgcgttg tattgcgcca   180

cccgttggct tagggaagaa ctgccctcgt aggttggcct acaagcgcct ggttcgaatg   240

aacatgccca tatccaatga ggacatgacg gtacacttta catccacact gatggccctc   300

atccggacgg cactggagat caagcttgcc ccag   334

<210> 25
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<212> PRT
<213> Rattus norvegicus

<400> 25

Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu Tyr Leu
1   5   10   15

Thr Arg Asp Ser Ser Ile Leu Gly Pro His His Leu Asp Glu Phe Ile
            20   25   30

Arg Val Trp Ala Glu Tyr Asp Pro Ala Ala Cys Cys Arg Ile His Tyr
        35   40   45

Lys Asp Met Tyr Ser Leu Leu Arg Cys Ile Ala Pro Pro Val Gly Leu
    50   55   60

Gly Lys Asn Cys Pro Arg Arg Leu Ala Tyr Lys Arg Leu Val Arg Met
65   70   75   80

Asn Met Pro Ile Ser Asn Glu Asp Met Thr Val His Phe Thr Ser Thr
                85   90   95

Leu Met Ala Leu Ile Arg Thr Ala Leu Glu Ile Lys Leu Ala Pro
            100   105   110

<210> 26
<211> 111
<212> PRT
<213> Rattus norvegicus

<400> 26

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Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu Tyr Leu
1               5                  10                  15


Thr Arg Asp Ser Ser Ile Leu Gly Pro His His Leu Asp Glu Phe Ile
            20              25                  30


Arg Val Trp Ala Glu Tyr Asp Pro Ala Ala Cys Gly Arg Ile Ser Tyr
        35              40                  45


Asn Asp Met Phe Glu Met Leu Lys His Met Ser Pro Pro Leu Gly Leu
    50              55                  60


Gly Lys Lys Cys Pro Ala Arg Val Ala Tyr Lys Arg Leu Val Arg Met
65              70              75                  80


Asn Met Pro Ile Ser Asn Glu Asp Met Thr Val His Phe Thr Ser Thr
            85                  90                  95


Leu Met Ala Leu Ile Arg Thr Ala Leu Glu Ile Lys Leu Ala Pro
            100             105             110
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<210> 27
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agccggggat gcgcgcggcg ccccgggagt c atg gtc cgc ttc ggg gac gag     112
                                    Met Val Arg Phe Gly Asp Glu
                                    1               5

cta ggc ggc cgc tat ggg ggc acc ggc ggc ggg gag cgg gct cgg ggc    160
Leu Gly Gly Arg Tyr Gly Gly Thr Gly Gly Gly Glu Arg Ala Arg Gly
        10              15                  20

ggc ggg gcc ggc ggg gcc ggt ggc ccg ggc cag ggg ggt ctg ccg ccg    208
Gly Gly Ala Gly Gly Ala Gly Gly Pro Gly Gln Gly Gly Leu Pro Pro
    25              30                  35

ggc cag cgg gtc ctg tac aag cag tcc att gcg caa cgc gca cgg acc    256
Gly Gln Arg Val Leu Tyr Lys Gln Ser Ile Ala Gln Arg Ala Arg Thr
```

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atg gcc ctg tac aac ccc atc cca gtc aag cag aac tgc ttc acc gtc        304
Met Ala Leu Tyr Asn Pro Ile Pro Val Lys Gln Asn Cys Phe Thr Val
                60                      65                      70

aac cgc tcg ctc ttc gtc ttc agc gag gac aac gtc gtc cgc aaa tat        352
Asn Arg Ser Leu Phe Val Phe Ser Glu Asp Asn Val Val Arg Lys Tyr
                75                      80                      85

gct aag cgc atc acc gaa tgg ccg ccc ttc gaa tat atg atc ctg gcc        400
Ala Lys Arg Ile Thr Glu Trp Pro Pro Phe Glu Tyr Met Ile Leu Ala
                90                      95                      100

acc atc atc gcc aac tgt att gtc ctg gcc ctg gag cag cac ctc cct        448
Thr Ile Ile Ala Asn Cys Ile Val Leu Ala Leu Glu Gln His Leu Pro
                105                     110                     115

gat ggg gac aag act ccc atg tct gaa cga ctg gat gac acg gaa cct        496
Asp Gly Asp Lys Thr Pro Met Ser Glu Arg Leu Asp Asp Thr Glu Pro
120                     125                     130                     135

tac ttc atc ggc atc ttt tgc ttc gag gcg ggc atc aag atc ata gct        544
Tyr Phe Ile Gly Ile Phe Cys Phe Glu Ala Gly Ile Lys Ile Ile Ala
                140                     145                     150

ctg ggc ttc gtg ttc cac aaa ggc tcc tac ctc cgg aat ggc tgg aac        592
Leu Gly Phe Val Phe His Lys Gly Ser Tyr Leu Arg Asn Gly Trp Asn
                155                     160                     165

gtc atg gac ttc gtg gtg gtc ctc aca ggg att ctt gcc aca gct gga        640
Val Met Asp Phe Val Val Val Leu Thr Gly Ile Leu Ala Thr Ala Gly
                170                     175                     180

act gac ttt gat ctg cgc acc ctg agg gct gtg cgt gtg ctt agg ccc        688
Thr Asp Phe Asp Leu Arg Thr Leu Arg Ala Val Arg Val Leu Arg Pro
                185                     190                     195

ctg aag ttg gtg tct gga att cca agc ttg cag gtg gtg ctc aag tcc        736
Leu Lys Leu Val Ser Gly Ile Pro Ser Leu Gln Val Val Leu Lys Ser
200                     205                     210                     215

atc atg aag gcc atg gtc ccg ctg ctg cag atc ggg ctg ctg ctc ttc        784
Ile Met Lys Ala Met Val Pro Leu Leu Gln Ile Gly Leu Leu Leu Phe
                220                     225                     230

ttc gcc atc ctc atg ttc gct atc atc ggc ctc gag ttc tat atg ggc        832
Phe Ala Ile Leu Met Phe Ala Ile Ile Gly Leu Glu Phe Tyr Met Gly
                235                     240                     245

aaa ttc cat aag gcc tgc ttc ccc aac agc aca gat gca gag cct gtg        880
Lys Phe His Lys Ala Cys Phe Pro Asn Ser Thr Asp Ala Glu Pro Val
                250                     255                     260

ggt gac ttt cct tgt ggc aag gag gcc cct gct cgt ctg tgt gac agt        928
Gly Asp Phe Pro Cys Gly Lys Glu Ala Pro Ala Arg Leu Cys Asp Ser
                265                     270                     275
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gac acc gaa tgc cgg gag tac tgg cca gga ccc aac ttt ggc atc acc      976
Asp Thr Glu Cys Arg Glu Tyr Trp Pro Gly Pro Asn Phe Gly Ile Thr
280             285             290             295

aat ttt gac aac atc ctg ttt gcc atc ttg acc gtg ttc cag tgt atc     1024
Asn Phe Asp Asn Ile Leu Phe Ala Ile Leu Thr Val Phe Gln Cys Ile
            300             305             310

acc atg gag ggc tgg act gac atc ctc tac aat aca aat gat gcg gcc     1072
Thr Met Glu Gly Trp Thr Asp Ile Leu Tyr Asn Thr Asn Asp Ala Ala
            315             320             325

ggc aac acg tgg aac tgg ttg tac ttc atc ccc ctc atc atc att ggc     1120
Gly Asn Thr Trp Asn Trp Leu Tyr Phe Ile Pro Leu Ile Ile Ile Gly
            330             335             340

tcc ttc ttc atg ctc aac ctg gtg ctc ggt gtg ctt tca gga gag ttt     1168
Ser Phe Phe Met Leu Asn Leu Val Leu Gly Val Leu Ser Gly Glu Phe
            345             350             355

gcc aaa gag cgg gag cga gtc gag aac cgc cgt gcc ttc ctg aag ctc     1216
Ala Lys Glu Arg Glu Arg Val Glu Asn Arg Arg Ala Phe Leu Lys Leu
360             365             370             375

cgc agg cag cag cag att gag cga gaa ctg aat ggg tac ttg gag tgg     1264
Arg Arg Gln Gln Gln Ile Glu Arg Glu Leu Asn Gly Tyr Leu Glu Trp
            380             385             390

atc ttc aag gcg gag gaa gtc atg ttg gca gag gag gac aag aac gca     1312
Ile Phe Lys Ala Glu Glu Val Met Leu Ala Glu Glu Asp Lys Asn Ala
            395             400             405

gaa gag aag tcc cct ttg gat gtg ttg aag aga gct gct acc aag aag     1360
Glu Glu Lys Ser Pro Leu Asp Val Leu Lys Arg Ala Ala Thr Lys Lys
            410             415             420

agc cga aat gac ctc atc cat gca gaa gag ggg gag gac cgg ttt gta     1408
Ser Arg Asn Asp Leu Ile His Ala Glu Glu Gly Glu Asp Arg Phe Val
            425             430             435

gac ctc tgt gct gct ggg tct ccc ttt gct cgt gcc agc ctc aag agt     1456
Asp Leu Cys Ala Ala Gly Ser Pro Phe Ala Arg Ala Ser Leu Lys Ser
440             445             450             455

ggg aag aca gag agc tca tcg tac ttc cgg agg aag gag aag atg ttc     1504
Gly Lys Thr Glu Ser Ser Ser Tyr Phe Arg Arg Lys Glu Lys Met Phe
            460             465             470

cgg ttc ctt atc cgt cgt atg gtg aaa gca cag agc ttc tac tgg gtg     1552
Arg Phe Leu Ile Arg Arg Met Val Lys Ala Gln Ser Phe Tyr Trp Val
            475             480             485

gta ctg tgc gtg gtg gcc ctg aac acg ttg tgt gtg gcc atg gta cac     1600
Val Leu Cys Val Val Ala Leu Asn Thr Leu Cys Val Ala Met Val His
            490             495             500
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tat aat cag cct cag cgg ctt acc act gca ctg tac ttt gca gag ttt          1648
Tyr Asn Gln Pro Gln Arg Leu Thr Thr Ala Leu Tyr Phe Ala Glu Phe
    505                 510                 515

gtt ttc ctg ggt ctc ttc ctc aca gag atg tcc ctg aag atg tac ggt          1696
Val Phe Leu Gly Leu Phe Leu Thr Glu Met Ser Leu Lys Met Tyr Gly
520                 525                 530                 535

cta ggg ccc aga agc tac ttc cgg tct tcc ttc aac tgc ttt gac ttt          1744
Leu Gly Pro Arg Ser Tyr Phe Arg Ser Ser Phe Asn Cys Phe Asp Phe
                540                 545                 550

ggg gtg att gtg ggg agt atc ttt gaa gta gtc tgg gct gcc atc aag          1792
Gly Val Ile Val Gly Ser Ile Phe Glu Val Val Trp Ala Ala Ile Lys
                555                 560                 565

cca gga acc tcc ttc gga atc agt gtg ctg cgg gct ctc cga ctg ctg          1840
Pro Gly Thr Ser Phe Gly Ile Ser Val Leu Arg Ala Leu Arg Leu Leu
            570                 575                 580

agg att ttc aaa gtc acc aag tat tgg aac tcc ctg agg aac ctg gtt          1888
Arg Ile Phe Lys Val Thr Lys Tyr Trp Asn Ser Leu Arg Asn Leu Val
    585                 590                 595

gtt tcc ctc ctc aac tcc atg aag tcc atc atc agc ctt ctc ttc ctg          1936
Val Ser Leu Leu Asn Ser Met Lys Ser Ile Ile Ser Leu Leu Phe Leu
600                 605                 610                 615

ctt ttc ctt ttc att gtg gtc ttc gct ctg ttg ggg atg cag ctg ttt          1984
Leu Phe Leu Phe Ile Val Val Phe Ala Leu Leu Gly Met Gln Leu Phe
                620                 625                 630

ggg gga cag ttc aac ttt caa gat gag act cca acc acc aat ttt gat          2032
Gly Gly Gln Phe Asn Phe Gln Asp Glu Thr Pro Thr Thr Asn Phe Asp
                635                 640                 645

acc ttc cca gct gcc atc ctc act gtg ttt cag att ctg aca gga gag          2080
Thr Phe Pro Ala Ala Ile Leu Thr Val Phe Gln Ile Leu Thr Gly Glu
            650                 655                 660

gac tgg aat gca gtc atg tat cat ggg att gag tca caa gga gga gtc          2128
Asp Trp Asn Ala Val Met Tyr His Gly Ile Glu Ser Gln Gly Gly Val
    665                 670                 675

agc aaa ggc atg ttt tca tcc ttt tac ttc atc gtc ctg aca ctg ttt          2176
Ser Lys Gly Met Phe Ser Ser Phe Tyr Phe Ile Val Leu Thr Leu Phe
680                 685                 690                 695

gga aac tac acc ctg ttg aac gtt ttc ttg gcc att gct gtg gac aac          2224
Gly Asn Tyr Thr Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn
                700                 705                 710

ctt gcc aat gcc cag gag ttg acc aag gat gaa gag gag atg gaa gag          2272
Leu Ala Asn Ala Gln Glu Leu Thr Lys Asp Glu Glu Glu Met Glu Glu
                715                 720                 725

gca gcc aat cag aag ctt gct ctt cag aag gcc aaa gaa gta gct gaa          2320
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Ala Ala Asn Gln Lys Leu Ala Leu Gln Lys Ala Lys Glu Val Ala Glu
        730                 735                 740

gtc agc ccc atg tct gct gcc aac atc tcc att gct gcc agg cag cag      2368
Val Ser Pro Met Ser Ala Ala Asn Ile Ser Ile Ala Ala Arg Gln Gln
        745                 750                 755

aac tcg gcc aag gcg cgc tca gta tgg gag cag cgg gcc agt cag cta      2416
Asn Ser Ala Lys Ala Arg Ser Val Trp Glu Gln Arg Ala Ser Gln Leu
760                 765                 770                 775

agg ctc cag aac ctg cgt gcc agc tgt gag gca ctg tac agt gag atg      2464
Arg Leu Gln Asn Leu Arg Ala Ser Cys Glu Ala Leu Tyr Ser Glu Met
                780                 785                 790

gac ccg gag gag cgc ctg cgt tat gcc agc acg cgc cac gtg agg cca      2512
Asp Pro Glu Glu Arg Leu Arg Tyr Ala Ser Thr Arg His Val Arg Pro
            795                 800                 805

gac atg aag aca cac atg gac cga ccc cta gtg gtg gaa cct ggt cgg      2560
Asp Met Lys Thr His Met Asp Arg Pro Leu Val Val Glu Pro Gly Arg
            810                 815                 820

gat ggc ctg cgg gga ccc gcc ggg aac aag tca aag cct gag ggc acg      2608
Asp Gly Leu Arg Gly Pro Ala Gly Asn Lys Ser Lys Pro Glu Gly Thr
        825                 830                 835

gag gcc acc gaa ggt gcg gat cca cca cgc cga cac cac cgg cat cgt      2656
Glu Ala Thr Glu Gly Ala Asp Pro Pro Arg Arg His His Arg His Arg
840                 845                 850                 855

gat agg gac aag acc tca gcc tca acc cct gct gga ggc gaa cag gac      2704
Asp Arg Asp Lys Thr Ser Ala Ser Thr Pro Ala Gly Gly Glu Gln Asp
                860                 865                 870

agg aca gac tgc cca aag gcc gaa agc acc gag acc ggg gcc cgg gag      2752
Arg Thr Asp Cys Pro Lys Ala Glu Ser Thr Glu Thr Gly Ala Arg Glu
            875                 880                 885

gaa cgt gcg cgc cct cgt cga agt cac agc aag gag gct cca ggg gct      2800
Glu Arg Ala Arg Pro Arg Arg Ser His Ser Lys Glu Ala Pro Gly Ala
            890                 895                 900

gac aca caa gtg cgt tgt gag cgc agt aga cgt cac cac cgg cgc gga      2848
Asp Thr Gln Val Arg Cys Glu Arg Ser Arg Arg His His Arg Arg Gly
        905                 910                 915

tcc ccg gag gag gcc act gaa cgg gaa cct cgg cgc cac cgt gcc cac      2896
Ser Pro Glu Glu Ala Thr Glu Arg Glu Pro Arg Arg His Arg Ala His
920                 925                 930                 935

cgg cac gca cag gac tca agc aag gaa ggc aag gag ggc act gca ccg      2944
Arg His Ala Gln Asp Ser Ser Lys Glu Gly Lys Glu Gly Thr Ala Pro
                940                 945                 950

gtg ctt gta ccc aag ggc gag cgt cgc gca aga cat cga ggc ccg cgt      2992
Val Leu Val Pro Lys Gly Glu Arg Arg Ala Arg His Arg Gly Pro Arg
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                  955                      960                      965

acg ggc ccc cgt gag aca gag aac agt gag gag ccc aca cgc agg cac        3040
Thr Gly Pro Arg Glu Thr Glu Asn Ser Glu Glu Pro Thr Arg Arg His
        970                      975                      980

cgt gca aag cat aag gtg cca cca aca ctt gag ccc cca gag agg gag        3088
Arg Ala Lys His Lys Val Pro Pro Thr Leu Glu Pro Pro Glu Arg Glu
        985                      990                      995

gtt gca gag aag gag agc  aac gtg gtg gaa ggg  gat aag gaa act        3133
Val Ala Glu Lys Glu Ser  Asn Val Val Glu Gly  Asp Lys Glu Thr
1000                 1005                 1010

cga aat cac cag ccc aag  gaa cct cgc tgt gac  ctg gag gcc att        3178
Arg Asn His Gln Pro Lys  Glu Pro Arg Cys Asp  Leu Glu Ala Ile
1015                 1020                 1025

gcg gtt aca ggc gtg ggc  tct ctg cac atg ctg  ccc agc acc tgt        3223
Ala Val Thr Gly Val Gly  Ser Leu His Met Leu  Pro Ser Thr Cys
1030                 1035                 1040

ctc cag aaa gtg gac gaa  cag cca gag gat gca  gac aac cag cgt        3268
Leu Gln Lys Val Asp Glu  Gln Pro Glu Asp Ala  Asp Asn Gln Arg
1045                 1050                 1055

aat gtc acc cgg atg ggc  agt cag ccc tca gac  ccc agc acc act        3313
Asn Val Thr Arg Met Gly  Ser Gln Pro Ser Asp  Pro Ser Thr Thr
1060                 1065                 1070

gtg cat gtc cca gtg aca  ctg aca ggc cct ccc  ggg gag gcc act        3358
Val His Val Pro Val Thr  Leu Thr Gly Pro Pro  Gly Glu Ala Thr
1075                 1080                 1085

gta gtt ccc agt gct aac  acg gac ctg gaa ggc  caa gcg gag ggc        3403
Val Val Pro Ser Ala Asn  Thr Asp Leu Glu Gly  Gln Ala Glu Gly
1090                 1095                 1100

aag aag gag gca gag gct  gac gat gtg ctg aga  aga ggc ccc agg        3448
Lys Lys Glu Ala Glu Ala  Asp Asp Val Leu Arg  Arg Gly Pro Arg
1105                 1110                 1115

ccc atc gtt ccc tac agt  tcc atg ttc tgc ctc  agc ccc acc aac        3493
Pro Ile Val Pro Tyr Ser  Ser Met Phe Cys Leu  Ser Pro Thr Asn
1120                 1125                 1130

cta ctc cgt cgc ttc tgc  cat tac att gtg acc  atg cgg tac ttt        3538
Leu Leu Arg Arg Phe Cys  His Tyr Ile Val Thr  Met Arg Tyr Phe
1135                 1140                 1145

gag atg gtg att ctt gtg  gtc atc gcc ttg agc  agc att gcc ctg        3583
Glu Met Val Ile Leu Val  Val Ile Ala Leu Ser  Ser Ile Ala Leu
1150                 1155                 1160

gct gct gag gat ccc gtg  cgg acc gac tca ttc  cgg aac aat gct        3628
Ala Ala Glu Asp Pro Val  Arg Thr Asp Ser Phe  Arg Asn Asn Ala
1165                 1170                 1175
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ctg aag tac atg gac tac   atc ttt aca gga gtc   ttc acc ttt gag        3673
Leu Lys Tyr Met Asp Tyr   Ile Phe Thr Gly Val   Phe Thr Phe Glu
1180                1185                  1190

atg gtc ata aag atg ata   gac ttg ggc ctg ctg   ctg cac cct ggg        3718
Met Val Ile Lys Met Ile   Asp Leu Gly Leu Leu   Leu His Pro Gly
1195                1200                  1205

gcc tac ttc cgg gac ctg   tgg aac att ctg gac   ttc att gtt gtc        3763
Ala Tyr Phe Arg Asp Leu   Trp Asn Ile Leu Asp   Phe Ile Val Val
1210                1215                  1220

agt gga gcc ctg gtg gca   ttt gca ttc tca gga   tcc aaa ggg aaa        3808
Ser Gly Ala Leu Val Ala   Phe Ala Phe Ser Gly   Ser Lys Gly Lys
1225                1230                  1235

gac atc aat acc atc aag   tct ctg aga gtc ctg   cga gtc ctg cgg        3853
Asp Ile Asn Thr Ile Lys   Ser Leu Arg Val Leu   Arg Val Leu Arg
1240                1245                  1250

ccc ctc aag acc atc aag   cgg ctg cct aaa ctc   aag gct gtg ttt        3898
Pro Leu Lys Thr Ile Lys   Arg Leu Pro Lys Leu   Lys Ala Val Phe
1255                1260                  1265

gac tgt gtg gtg aac tct   ctg aag aat gtc ttg   aac atc ctg atc        3943
Asp Cys Val Val Asn Ser   Leu Lys Asn Val Leu   Asn Ile Leu Ile
1270                1275                  1280

gtc tac atg ctc ttc atg   ttt ata ttt gcc gtc   atc gcc gtc caa        3988
Val Tyr Met Leu Phe Met   Phe Ile Phe Ala Val   Ile Ala Val Gln
1285                1290                  1295

ctc ttc aaa ggg aag ttc   ttt tac tgc act gat   gag tcc aag gag        4033
Leu Phe Lys Gly Lys Phe   Phe Tyr Cys Thr Asp   Glu Ser Lys Glu
1300                1305                  1310

ctg gag cgg gac tgc agg   ggt cag tat ttg gat   tat gag aag gaa        4078
Leu Glu Arg Asp Cys Arg   Gly Gln Tyr Leu Asp   Tyr Glu Lys Glu
1315                1320                  1325

gag gta gaa gcc cag cca   agg cag tgg aag aaa   tat gac ttc cac        4123
Glu Val Glu Ala Gln Pro   Arg Gln Trp Lys Lys   Tyr Asp Phe His
1330                1335                  1340

tat gac aat gtg ctc tgg   gcc ttg ctg act ctg   ttt acg gtg tcc        4168
Tyr Asp Asn Val Leu Trp   Ala Leu Leu Thr Leu   Phe Thr Val Ser
1345                1350                  1355

aca gga gag ggg tgg ccc   atg gtg ctg aaa cac   tct gtg gac gcc        4213
Thr Gly Glu Gly Trp Pro   Met Val Leu Lys His   Ser Val Asp Ala
1360                1365                  1370

acc tat gag gag cag ggg   cca agc ccc ggg ttt   cgg atg gag ctt        4258
Thr Tyr Glu Glu Gln Gly   Pro Ser Pro Gly Phe   Arg Met Glu Leu
1375                1380                  1385
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tcc atc ttc tat gtg gtc  tac ttt gtg gtc ttc  cct ttt ttc ttt        4303
Ser Ile Phe Tyr Val Val  Tyr Phe Val Val Phe  Pro Phe Phe Phe
1390             1395                1400

gtc aac atc ttt gtg gcc  ttg atc atc atc acc  ttc cag gag cag        4348
Val Asn Ile Phe Val Ala  Leu Ile Ile Ile Thr  Phe Gln Glu Gln
1405             1410                1415

ggg gac aag gtg atg tct  gag tgc agt ctg gaa  aag aat gag agg        4393
Gly Asp Lys Val Met Ser  Glu Cys Ser Leu Glu  Lys Asn Glu Arg
1420             1425                1430

gct tgc att gac ttt gcc  atc agc gcc aaa ccc  ctg aca cgg tac        4438
Ala Cys Ile Asp Phe Ala  Ile Ser Ala Lys Pro  Leu Thr Arg Tyr
1435             1440                1445

atg cct cag aac aag cag  tcg ttc cag tat aag  aca tgg aca ttt        4483
Met Pro Gln Asn Lys Gln  Ser Phe Gln Tyr Lys  Thr Trp Thr Phe
1450             1455                1460

gtg gtc tct cca ccc ttt  gag tac ttc att atg  gcc atg ata gcc        4528
Val Val Ser Pro Pro Phe  Glu Tyr Phe Ile Met  Ala Met Ile Ala
1465             1470                1475

ctc aac aca gtg gtg ctg  atg atg aag ttc tac  gat gcc cct tat        4573
Leu Asn Thr Val Val Leu  Met Met Lys Phe Tyr  Asp Ala Pro Tyr
1480             1485                1490

gag tac gag ctg atg ctg  aag tgc ttg aac atc  gtc ttc aca tcc        4618
Glu Tyr Glu Leu Met Leu  Lys Cys Leu Asn Ile  Val Phe Thr Ser
1495             1500                1505

atg ttc tct ctg gag tgc  atc ctg aag atc atc  gcc ttc ggg gtg        4663
Met Phe Ser Leu Glu Cys  Ile Leu Lys Ile Ile  Ala Phe Gly Val
1510             1515                1520

ttg aac tac ttc aga gat  gcc tgg aac gtc ttt  gac ttt gtc act        4708
Leu Asn Tyr Phe Arg Asp  Ala Trp Asn Val Phe  Asp Phe Val Thr
1525             1530                1535

gtt ttg gga agt att act  gat att tta gta acg  gag att gcg gaa        4753
Val Leu Gly Ser Ile Thr  Asp Ile Leu Val Thr  Glu Ile Ala Glu
1540             1545                1550

acg aac aac ttc atc aac  ttg agc ttc ctt cgc  ctc ttc cgg gca        4798
Thr Asn Asn Phe Ile Asn  Leu Ser Phe Leu Arg  Leu Phe Arg Ala
1555             1560                1565

gca cgg ctg atc aag ctg  ctt cgc cag ggc tac  acc atc cgc atc        4843
Ala Arg Leu Ile Lys Leu  Leu Arg Gln Gly Tyr  Thr Ile Arg Ile
1570             1575                1580

ttg tta tgg acc ttt gtc  cag tcc ttt aag gcg  ctg ccc tac gtg        4888
Leu Leu Trp Thr Phe Val  Gln Ser Phe Lys Ala  Leu Pro Tyr Val
1585             1590                1595

tgc ctc ctc att gcc atg  ctg ttc ttc atc tac  gcc atc atc ggc        4933
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Cys Leu Leu Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly
1600              1605                1610

atg cag gtt ttt gga aac att gcc ctt gat gat ggc acc agc atc      4978
Met Gln Val Phe Gly Asn Ile Ala Leu Asp Asp Gly Thr Ser Ile
1615              1620                1625

aac cga cac aac aac ttc cgg aca ttt ctg caa gcc tta atg ctg      5023
Asn Arg His Asn Asn Phe Arg Thr Phe Leu Gln Ala Leu Met Leu
1630              1635                1640

ttg ttc agg agt gcc act ggg gag gcc tgg cac gaa atc atg ctg      5068
Leu Phe Arg Ser Ala Thr Gly Glu Ala Trp His Glu Ile Met Leu
1645              1650                1655

tct tgc ctg ggc aac cgg gcc tgc gac cca cat gcc aac gcc agc      5113
Ser Cys Leu Gly Asn Arg Ala Cys Asp Pro His Ala Asn Ala Ser
1660              1665                1670

gaa tgc ggg agc gac ttt gcc tat ttt tat ttt gtc tcc ttc atc      5158
Glu Cys Gly Ser Asp Phe Ala Tyr Phe Tyr Phe Val Ser Phe Ile
1675              1680                1685

ttc ctc tgt tcc ttt ctg atg ctg aac ctc ttt gtt gct gtg atc      5203
Phe Leu Cys Ser Phe Leu Met Leu Asn Leu Phe Val Ala Val Ile
1690              1695                1700

atg gac aat ttc gaa tac ctc acg cgg gat tct tcc atc cta ggg      5248
Met Asp Asn Phe Glu Tyr Leu Thr Arg Asp Ser Ser Ile Leu Gly
1705              1710                1715

ccg cac cac ctc gat gaa ttc att cgc gtc tgg gct gaa tac gac      5293
Pro His His Leu Asp Glu Phe Ile Arg Val Trp Ala Glu Tyr Asp
1720              1725                1730

cca gct gcg tgt ggg cgc atc agt tac aat gac atg ttt gag atg      5338
Pro Ala Ala Cys Gly Arg Ile Ser Tyr Asn Asp Met Phe Glu Met
1735              1740                1745

ctg aaa cac atg tcc cca cct ctg ggt ttg ggg aag aaa tgc ccg      5383
Leu Lys His Met Ser Pro Pro Leu Gly Leu Gly Lys Lys Cys Pro
1750              1755                1760

gct cga gtt gca tac aag cgc ctg gtt cga atg aac atg ccc ata      5428
Ala Arg Val Ala Tyr Lys Arg Leu Val Arg Met Asn Met Pro Ile
1765              1770                1775

tcc aat gag gac atg acg gta cac ttt aca tcc aca ctg atg gcc      5473
Ser Asn Glu Asp Met Thr Val His Phe Thr Ser Thr Leu Met Ala
1780              1785                1790

ctc atc cgg acg gca ctg gag atc aag ctt gcc cca gcg ggg aca      5518
Leu Ile Arg Thr Ala Leu Glu Ile Lys Leu Ala Pro Ala Gly Thr
1795              1800                1805

aaa cag cac caa tgt gat gct gag ctg agg aag gag atc tct tct      5563
Lys Gln His Gln Cys Asp Ala Glu Leu Arg Lys Glu Ile Ser Ser
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1810                        1815                        1820

gtg  tgg  gct  aat  ctg  ccc  cag  aag  act  ctg  gac  tta  ctg  gtg  cca        5608
Val  Trp  Ala  Asn  Leu  Pro  Gln  Lys  Thr  Leu  Asp  Leu  Leu  Val  Pro
1825                     1830                     1835

ccc  cac  aaa  cct  gac  gag  atg  aca  gtg  ggg  aag  gtc  tat  gcg  gct        5653
Pro  His  Lys  Pro  Asp  Glu  Met  Thr  Val  Gly  Lys  Val  Tyr  Ala  Ala
1840                     1845                     1850

ctc  atg  ata  ttt  gac  ttc  tac  aaa  cag  aac  aaa  acc  acc  aga  gat        5698
Leu  Met  Ile  Phe  Asp  Phe  Tyr  Lys  Gln  Asn  Lys  Thr  Thr  Arg  Asp
1855                     1860                     1865

cag  act  cac  caa  gct  cct  gga  ggc  ctg  tcc  cag  atg  ggt  cct  gtt        5743
Gln  Thr  His  Gln  Ala  Pro  Gly  Gly  Leu  Ser  Gln  Met  Gly  Pro  Val
1870                     1875                     1880

tcc  ctg  ttc  cat  cct  ctg  aag  gcc  acc  ctg  gag  cag  aca  cag  ccc        5788
Ser  Leu  Phe  His  Pro  Leu  Lys  Ala  Thr  Leu  Glu  Gln  Thr  Gln  Pro
1885                     1890                     1895

gct  gtg  ctc  cga  gga  gct  cgg  gtt  ttc  ctt  cga  caa  aag  agt  gca        5833
Ala  Val  Leu  Arg  Gly  Ala  Arg  Val  Phe  Leu  Arg  Gln  Lys  Ser  Ala
1900                     1905                     1910

act  tcc  ctc  agc  aat  ggg  ggc  gcc  ata  caa  acc  cag  gaa  agt  ggc        5878
Thr  Ser  Leu  Ser  Asn  Gly  Gly  Ala  Ile  Gln  Thr  Gln  Glu  Ser  Gly
1915                     1920                     1925

atc  aag  gag  tcc  ctg  tcc  tgg  ggc  acg  cag  agg  acc  cag  gac  gta        5923
Ile  Lys  Glu  Ser  Leu  Ser  Trp  Gly  Thr  Gln  Arg  Thr  Gln  Asp  Val
1930                     1935                     1940

ctt  tat  gag  gcc  aga  gca  cct  cta  gaa  cgt  ggc  cat  tct  gca  gag        5968
Leu  Tyr  Glu  Ala  Arg  Ala  Pro  Leu  Glu  Arg  Gly  His  Ser  Ala  Glu
1945                     1950                     1955

atc  cct  gtg  ggg  cag  cca  gga  gca  ctg  gct  gta  gat  gtc  cag  atg        6013
Ile  Pro  Val  Gly  Gln  Pro  Gly  Ala  Leu  Ala  Val  Asp  Val  Gln  Met
1960                     1965                     1970

cag  aac  atg  aca  ttg  aga  gga  ccg  gat  ggg  gag  ccc  cag  cct  ggc        6058
Gln  Asn  Met  Thr  Leu  Arg  Gly  Pro  Asp  Gly  Glu  Pro  Gln  Pro  Gly
1975                     1980                     1985

ctg  gag  agc  caa  ggc  cga  gcg  gcc  tct  atg  cca  cgc  ctg  gcg  gca        6103
Leu  Glu  Ser  Gln  Gly  Arg  Ala  Ala  Ser  Met  Pro  Arg  Leu  Ala  Ala
1990                     1995                     2000

gaa  aca  cag  ccg  gcc  cct  aat  gcc  agc  ccc  atg  aag  cgc  tcc  atc        6148
Glu  Thr  Gln  Pro  Ala  Pro  Asn  Ala  Ser  Pro  Met  Lys  Arg  Ser  Ile
2005                     2010                     2015

tcc  aca  ctg  gct  cca  cgc  ccg  cat  ggg  act  cag  ctt  tgc  aac  aca        6193
Ser  Thr  Leu  Ala  Pro  Arg  Pro  His  Gly  Thr  Gln  Leu  Cys  Asn  Thr
2020                     2025                     2030
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gtc ctg gac cgg cca cct   cct agc cag gtg tcc   cat cac cac cac        6238
Val Leu Asp Arg Pro Pro   Pro Ser Gln Val Ser   His His His His
2035             2040                2045

cac cgc tgc cac cgg cgc   agg gac aag aag cag   agg tcc ctg gaa        6283
His Arg Cys His Arg Arg   Arg Asp Lys Lys Gln   Arg Ser Leu Glu
2050             2055                2060

aag ggg ccc agc ctg tct   gtt gac aca gaa ggt   gca cca agt act        6328
Lys Gly Pro Ser Leu Ser   Val Asp Thr Glu Gly   Ala Pro Ser Thr
2065             2070                2075

gct gca gga tct ggc ctg   ccc cat gga gaa ggg   tcc aca ggc tgc        6373
Ala Ala Gly Ser Gly Leu   Pro His Gly Glu Gly   Ser Thr Gly Cys
2080             2085                2090

cgg cgg gag cgt aag caa   gag cga ggc cgg tcc   cag gag cgg agg        6418
Arg Arg Glu Arg Lys Gln   Glu Arg Gly Arg Ser   Gln Glu Arg Arg
2095             2100                2105

cag ccc tcc tcc tct tct   tca gag aag cag cgc   ttc tat tcc tgt        6463
Gln Pro Ser Ser Ser Ser   Ser Glu Lys Gln Arg   Phe Tyr Ser Cys
2110             2115                2120

gac cgc ttt ggg agc cgg   gag ccc cca caa cct   aag ccc tcc ctc        6508
Asp Arg Phe Gly Ser Arg   Glu Pro Pro Gln Pro   Lys Pro Ser Leu
2125             2130                2135

agt agc cac ccc ata tcg   cca aca gcg gca cta   gag cca gga ccc        6553
Ser Ser His Pro Ile Ser   Pro Thr Ala Ala Leu   Glu Pro Gly Pro
2140             2145                2150

cac ccg cag ggc agt ggt   tcc gtt aat ggg agc   ccc ttg atg tca        6598
His Pro Gln Gly Ser Gly   Ser Val Asn Gly Ser   Pro Leu Met Ser
2155             2160                2165

aca tct ggt gct agc acg   ccg ggc cga ggt ggg   cgg agg cag ctc        6643
Thr Ser Gly Ala Ser Thr   Pro Gly Arg Gly Gly   Arg Arg Gln Leu
2170             2175                2180

ccc cag act ccc ctg acc   cca cgc ccc agc atc   acc tac aag acg        6688
Pro Gln Thr Pro Leu Thr   Pro Arg Pro Ser Ile   Thr Tyr Lys Thr
2185             2190                2195

gcc aat tcc tcg cct gtc   cac ttt gct gag ggt   cag agt ggc ctt        6733
Ala Asn Ser Ser Pro Val   His Phe Ala Glu Gly   Gln Ser Gly Leu
2200             2205                2210

cca gcc ttc tcc cct ggc   cgt ctc agc cgc ggc   ctt tct gaa cac        6778
Pro Ala Phe Ser Pro Gly   Arg Leu Ser Arg Gly   Leu Ser Glu His
2215             2220                2225

aat gcc ctg ctc cag aaa   gag ccc ctg agc cag   cct cta gct tct        6823
Asn Ala Leu Leu Gln Lys   Glu Pro Leu Ser Gln   Pro Leu Ala Ser
2230             2235                2240
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ggc  tcc cgc att ggc tct  gac cct tac cta ggg  cag cgt ctg gac      6868
Gly  Ser Arg Ile Gly Ser  Asp Pro Tyr Leu Gly  Gln Arg Leu Asp
2245               2250                2255

agt  gag gcc tct gcc cac  aac ctg cct gag gat  aca ctc acc ttt      6913
Ser  Glu Ala Ser Ala His  Asn Leu Pro Glu Asp  Thr Leu Thr Phe
2260               2265                2270

gaa  gag gcc gtg gcc acc  aac tct ggc cgc tcc  tcc agg act tcc      6958
Glu  Glu Ala Val Ala Thr  Asn Ser Gly Arg Ser  Ser Arg Thr Ser
2275               2280                2285

tat  gtg tcc tcc ctc act  tcc caa tcc cac cct  ctc cgc cgt gta      7003
Tyr  Val Ser Ser Leu Thr  Ser Gln Ser His Pro  Leu Arg Arg Val
2290               2295                2300

ccc  aat ggc tac cac tgc  act ttg gga ctc agc  acc ggc gtc cgg      7048
Pro  Asn Gly Tyr His Cys  Thr Leu Gly Leu Ser  Thr Gly Val Arg
2305               2310                2315

gcg  cgg cac agc tac cac  cac cca gac cag gat  cac tgg tgc tag      7093
Ala  Arg His Ser Tyr His  His Pro Asp Gln Asp  His Trp Cys
2320               2325                2330

ctgcaccacg accacccatg caccagctcg tgggtgcggg ttccagttga tgagttttat    7153

catccgctct gggttgtgcg tcacagccc tgggaggagg gtcctcacat cgcggcctct      7213

gtggtggagg ttcctgcttc tctccctccc tcccttttac actggacaga ctaataaagc     7273

cctttcttag agggatatgg tcctctctat cctcctgtgt actgccttcc tgggttccat     7333

gccagatgtt ggatcctaag cagaggtagc tgagttgaga tagacccagc aaatccaaat     7393

cctatgtcat ggcctccagc ttccagggtg ggtacttggg actttcttag gaggtctgag     7453

cctcatggag attgtggttt gtccaaatgt gtggcatggg ggatagggta ccctcaaagg     7513

caaggaaagg agcccaactg tgtggcctgg cagcacctgc cagcatcact actctcatgt     7573

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gcttgcgtga ggcactttcc gccttttaaa atctgattct cagggatggg atgcctgcca   8173

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tattcactga atgctgaaga gagcaaaatg caagcaaaga agggactggg gttagaggga   8293

gaagcccgca ctggcagcat aataagaaac tggcagggag gggatggtcc tggaacaggc   8353

caggtgccta gagctgagtc cagcccctgg cccggaactg gggacacagc actcaaataa   8413

aacctcatgg ctacttggtg aaaggcaaac ccatgctcag gaaggtgttc agtgtgcaga   8473

gatggctgtg aggccatgag agaaaggttt cacataggca ggcagtcctt ggtgtgttct   8533

ctgtgttttg aaacgtctga tgacttcttg gtggactgtt ggtttctacc ccatgtttct   8593

cacagaagct gtgtatatgt gtgattgcgc gtgtgattgc atgtgtgtgg tagtgtgcgt   8653

gcgtgagcat gcatgagtca taggaaatgt gtgtgtgtgt gtgtgtgtgt gtgtaggtgt   8713

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tataaattga aggtttgttg caaaaattta tatttaacag tgttgagaga gagagaaaga   9493

gcgagagagg gagagagaga gaaagatcca atcatgcaac agaaatggga ctactttaaa   9553

aatcagtcct ttgactagtt tgctgccctg aataatattt acaaaccaaa ctttggattc   9613

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<210> 28

<211> 2333
<212> PRT
<213> Rattus norvegicus

<400> 28

Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Thr Gly
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Gly Gly Glu Arg Ala Arg Gly Gly Ala Gly Gly Ala Gly Gly Pro
            20   25   30

Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
        35   40   45

Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
        50   55   60

Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65   70   75   80

Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                85   90   95

Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
                100   105   110

Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
        115   120   125

Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
        130   135   140

Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145   150   155   160

Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
                165   170   175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
                180   185   190

Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
        195   200   205

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Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
    210             215             220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225             230             235             240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
            245             250             255

Ser Thr Asp Ala Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
        260             265             270

Pro Ala Arg Leu Cys Asp Ser Asp Thr Glu Cys Arg Glu Tyr Trp Pro
        275             280             285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
    290             295             300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305             310             315             320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
            325             330             335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
        340             345             350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
        355             360             365

Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
    370             375             380

Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385             390             395             400

Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
            405             410             415

Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
            420             425             430
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Glu Gly Glu Asp Arg Phe Val Asp Leu Cys Ala Ala Gly Ser Pro Phe
        435   440   445

Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
        450   455   460

Arg Arg Lys Glu Lys Met Phe Arg Phe Leu Ile Arg Arg Met Val Lys
465   470   475   480

Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
                485   490   495

Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr Thr
            500   505   510

Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
        515   520   525

Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
    530   535   540

Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe Glu
545   550   555   560

Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser Val
            565   570   575

Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
        580   585   590

Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
        595   600   605

Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
    610   615   620

Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625   630   635   640

Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
            645   650   655

Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly

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                660                       665                        670


    Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe Tyr
            675                 680                 685


    Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
            690                 695                 700


    Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
    705                 710                 715    .                720


    Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
                    725                 730                 735


    Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
                740                 745                 750


    Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val Trp
            755                 760                 765


    Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys
        770                 775                 780


    Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr Ala
    785                 790                 795                 800


    Ser Thr Arg His Val Arg Pro Asp Met Lys Thr His Met Asp Arg Pro
                    805                 810                 815


    Leu Val Val Glu Pro Gly Arg Asp Gly Leu Arg Gly Pro Ala Gly Asn
                820                 825                 830


    Lys Ser Lys Pro Glu Gly Thr Glu Ala Thr Glu Gly Ala Asp Pro Pro
            835                 840                 845


    Arg Arg His His Arg His Arg Asp Arg Asp Lys Thr Ser Ala Ser Thr
        850                 855                 860


    Pro Ala Gly Gly Glu Gln Asp Arg Thr Asp Cys Pro Lys Ala Glu Ser
    865                 870                 875                 880


    Thr Glu Thr Gly Ala Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser His
                885                 890                 895
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Ser Lys Glu Ala Pro Gly Ala Asp Thr Gln Val Arg Cys Glu Arg Ser
        900   905   910

Arg Arg His His Arg Arg Gly Ser Pro Glu Glu Ala Thr Glu Arg Glu
        915   920   925

Pro Arg Arg His Arg Ala His Arg His Ala Gln Asp Ser Ser Lys Glu
    930   935   940

Gly Lys Glu Gly Thr Ala Pro Val Leu Val Pro Lys Gly Glu Arg Arg
945   950   955   960

Ala Arg His Arg Gly Pro Arg Thr Gly Pro Arg Glu Thr Glu Asn Ser
                965   970   975

Glu Glu Pro Thr Arg Arg His Arg Ala Lys His Lys Val Pro Pro Thr
            980   985   990

Leu Glu Pro Pro Glu Arg Glu Val Ala Glu Lys Glu Ser Asn Val Val
        995   1000   1005

Glu Gly Asp Lys Glu Thr Arg Asn His Gln Pro Lys Glu Pro Arg
    1010   1015   1020

Cys Asp Leu Glu Ala Ile Ala Val Thr Gly Val Gly Ser Leu His
    1025   1030   1035

Met Leu Pro Ser Thr Cys Leu Gln Lys Val Asp Glu Gln Pro Glu
    1040   1045   1050

Asp Ala Asp Asn Gln Arg Asn Val Thr Arg Met Gly Ser Gln Pro
    1055   1060   1065

Ser Asp Pro Ser Thr Thr Val His Val Pro Val Thr Leu Thr Gly
    1070   1075   1080

Pro Pro Gly Glu Ala Thr Val Val Pro Ser Ala Asn Thr Asp Leu
    1085   1090   1095

Glu Gly Gln Ala Glu Gly Lys Lys Glu Ala Glu Ala Asp Asp Val
    1100   1105   1110

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Leu Arg  Arg Gly Pro Arg Pro  Ile Val Pro Tyr Ser  Ser Met Phe
    1115                1120             1125

Cys Leu  Ser Pro Thr Asn Leu  Leu Arg Arg Phe Cys  His Tyr Ile
    1130                1135             1140

Val Thr  Met Arg Tyr Phe Glu  Met Val Ile Leu Val  Val Ile Ala
    1145                1150             1155

Leu Ser  Ser Ile Ala Leu Ala  Ala Glu Asp Pro Val  Arg Thr Asp
    1160                1165             1170

Ser Phe  Arg Asn Asn Ala Leu  Lys Tyr Met Asp Tyr  Ile Phe Thr
    1175                1180             1185

Gly Val  Phe Thr Phe Glu Met  Val Ile Lys Met Ile  Asp Leu Gly
    1190                1195             1200

Leu Leu  Leu His Pro Gly Ala  Tyr Phe Arg Asp Leu  Trp Asn Ile
    1205                1210             1215

Leu Asp  Phe Ile Val Val Ser  Gly Ala Leu Val Ala  Phe Ala Phe
    1220                1225             1230

Ser Gly  Ser Lys Gly Lys Asp  Ile Asn Thr Ile Lys  Ser Leu Arg
    1235                1240             1245

Val Leu  Arg Val Leu Arg Pro  Leu Lys Thr Ile Lys  Arg Leu Pro
    1250                1255             1260

Lys Leu  Lys Ala Val Phe Asp  Cys Val Val Asn Ser  Leu Lys Asn
    1265                1270             1275

Val Leu  Asn Ile Leu Ile Val  Tyr Met Leu Phe Met  Phe Ile Phe
    1280                1285             1290

Ala Val  Ile Ala Val Gln Leu  Phe Lys Gly Lys Phe  Phe Tyr Cys
    1295                1300             1305

Thr Asp  Glu Ser Lys Glu Leu  Glu Arg Asp Cys Arg  Gly Gln Tyr
    1310                1315             1320
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Leu Asp  Tyr Glu Lys Glu Glu  Val Glu Ala Gln Pro  Arg Gln Trp
    1325             1330              1335

Lys Lys  Tyr Asp Phe His Tyr  Asp Asn Val Leu Trp  Ala Leu Leu
    1340             1345              1350

Thr Leu  Phe Thr Val Ser Thr  Gly Glu Gly Trp Pro  Met Val Leu
    1355             1360              1365

Lys His  Ser Val Asp Ala Thr  Tyr Glu Glu Gln Gly  Pro Ser Pro
    1370             1375              1380

Gly Phe  Arg Met Glu Leu Ser  Ile Phe Tyr Val Val  Tyr Phe Val
    1385             1390              1395

Val Phe  Pro Phe Phe Phe Val  Asn Ile Phe Val Ala  Leu Ile Ile
    1400             1405              1410

Ile Thr  Phe Gln Glu Gln Gly  Asp Lys Val Met Ser  Glu Cys Ser
    1415             1420              1425

Leu Glu  Lys Asn Glu Arg Ala  Cys Ile Asp Phe Ala  Ile Ser Ala
    1430             1435              1440

Lys Pro  Leu Thr Arg Tyr Met  Pro Gln Asn Lys Gln  Ser Phe Gln
    1445             1450              1455

Tyr Lys  Thr Trp Thr Phe Val  Val Ser Pro Pro Phe  Glu Tyr Phe
    1460             1465              1470

Ile Met  Ala Met Ile Ala Leu  Asn Thr Val Val Leu  Met Met Lys
    1475             1480              1485

Phe Tyr  Asp Ala Pro Tyr Glu  Tyr Glu Leu Met Leu  Lys Cys Leu
    1490             1495              1500

Asn Ile  Val Phe Thr Ser Met  Phe Ser Leu Glu Cys  Ile Leu Lys
    1505             1510              1515

Ile Ile  Ala Phe Gly Val Leu  Asn Tyr Phe Arg Asp  Ala Trp Asn
    1520             1525              1530

Val Phe  Asp Phe Val Thr Val  Leu Gly Ser Ile Thr  Asp Ile Leu
```

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         1535                    1540                     1545

Val Thr Glu Ile Ala Glu Thr Asn Asn Phe Ile Asn Leu Ser Phe
    1550                    1555                1560


Leu Arg Leu Phe Arg Ala Ala Arg Leu Ile Lys Leu Leu Arg Gln
    1565       ·            1570                1575


Gly Tyr Thr Ile Arg Ile Leu Leu Trp Thr Phe Val Gln Ser Phe
    1580                    1585                1590


Lys Ala Leu Pro Tyr Val Cys Leu Leu Ile Ala Met Leu Phe Phe
    1595                    1600                1605


Ile Tyr Ala Ile Ile Gly Met Gln Val Phe Gly Asn Ile Ala Leu
    1610       ·            1615                1620


Asp Asp Gly Thr Ser Ile Asn Arg His Asn Asn Phe Arg Thr Phe
    1625                    1630                1635


Leu Gln Ala Leu Met Leu Leu Phe Arg Ser Ala Thr Gly Glu Ala
    1640                    1645                1650


Trp His Glu Ile Met Leu Ser Cys Leu Gly Asn Arg Ala Cys Asp
    1655                    1660                1665


Pro His Ala Asn Ala Ser Glu Cys Gly Ser Asp Phe Ala Tyr Phe
    1670                    1675                1680


Tyr Phe Val Ser Phe Ile Phe Leu Cys Ser Phe Leu Met Leu Asn
    1685                    1690                1695


Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu Tyr Leu Thr Arg
    1700                    1705                1710


Asp Ser Ser Ile Leu Gly Pro His His Leu Asp Glu Phe Ile Arg
    1715                    1720                1725


Val Trp Ala Glu Tyr Asp Pro Ala Ala Cys Gly Arg Ile Ser Tyr
    1730                    1735                1740


Asn Asp Met Phe Glu Met Leu Lys His Met Ser Pro Pro Leu Gly
    1745                    1750                1755
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Leu Gly Lys Lys Cys Pro Ala  Arg Val Ala Tyr Lys  Arg Leu Val
    1760            1765               1770

Arg Met Asn Met Pro Ile Ser  Asn Glu Asp Met Thr  Val His Phe
    1775            1780               1785

Thr Ser Thr Leu Met Ala Leu  Ile Arg Thr Ala Leu  Glu Ile Lys
    1790            1795               1800

Leu Ala Pro Ala Gly Thr Lys  Gln His Gln Cys Asp  Ala Glu Leu
    1805            1810               1815

Arg Lys Glu Ile Ser Ser Val  Trp Ala Asn Leu Pro  Gln Lys Thr
    1820            1825               1830

Leu Asp Leu Leu Val Pro Pro  His Lys Pro Asp Glu  Met Thr Val
    1835            1840               1845

Gly Lys Val Tyr Ala Ala Leu  Met Ile Phe Asp Phe  Tyr Lys Gln
    1850            1855               1860

Asn Lys Thr Thr Arg Asp Gln  Thr His Gln Ala Pro  Gly Gly Leu
    1865            1870               1875

Ser Gln Met Gly Pro Val Ser  Leu Phe His Pro Leu  Lys Ala Thr
    1880            1885               1890

Leu Glu Gln Thr Gln Pro Ala  Val Leu Arg Gly Ala  Arg Val Phe
    1895            1900               1905

Leu Arg Gln Lys Ser Ala Thr  Ser Leu Ser Asn Gly  Gly Ala Ile
    1910            1915               1920

Gln Thr Gln Glu Ser Gly Ile  Lys Glu Ser Leu Ser  Trp Gly Thr
    1925            1930               1935

Gln Arg Thr Gln Asp Val Leu  Tyr Glu Ala Arg Ala  Pro Leu Glu
    1940            1945               1950

Arg Gly His Ser Ala Glu Ile  Pro Val Gly Gln Pro  Gly Ala Leu
    1955            1960               1965
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Ala Val Asp Val Gln Met Gln Asn Met Thr Leu Arg Gly Pro Asp
    1970            1975              1980

Gly Glu Pro Gln Pro Gly Leu Glu Ser Gln Gly Arg Ala Ala Ser
    1985            1990              1995

Met Pro Arg Leu Ala Ala Glu Thr Gln Pro Ala Pro Asn Ala Ser
    2000            2005              2010

Pro Met Lys Arg Ser Ile Ser Thr Leu Ala Pro Arg Pro His Gly
    2015            2020              2025

Thr Gln Leu Cys Asn Thr Val Leu Asp Arg Pro Pro Pro Ser Gln
    2030            2035              2040

Val Ser His His His His His Arg Cys His Arg Arg Arg Asp Lys
    2045            2050              2055

Lys Gln Arg Ser Leu Glu Lys Gly Pro Ser Leu Ser Val Asp Thr
    2060            2065              2070

Glu Gly Ala Pro Ser Thr Ala Ala Gly Ser Gly Leu Pro His Gly
    2075            2080              2085

Glu Gly Ser Thr Gly Cys Arg Arg Glu Arg Lys Gln Glu Arg Gly
    2090            2095              2100

Arg Ser Gln Glu Arg Arg Gln Pro Ser Ser Ser Ser Ser Glu Lys
    2105            2110              2115

Gln Arg Phe Tyr Ser Cys Asp Arg Phe Gly Ser Arg Glu Pro Pro
    2120            2125              2130

Gln Pro Lys Pro Ser Leu Ser Ser His Pro Ile Ser Pro Thr Ala
    2135            2140              2145

Ala Leu Glu Pro Gly Pro His Pro Gln Gly Ser Gly Ser Val Asn
    2150            2155              2160

Gly Ser Pro Leu Met Ser Thr Ser Gly Ala Ser Thr Pro Gly Arg
    2165            2170              2175
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Gly Gly  Arg Arg Gln Leu Pro  Gln Thr Pro Leu Thr  Pro Arg Pro
    2180                2185                2190


Ser Ile  Thr Tyr Lys Thr Ala  Asn Ser Ser Pro Val  His Phe Ala
    2195                2200                2205


Glu Gly  Gln Ser Gly Leu Pro  Ala Phe Ser Pro Gly  Arg Leu Ser
    2210                2215                2220


Arg Gly  Leu Ser Glu His Asn  Ala Leu Leu Gln Lys  Glu Pro Leu
    2225                2230                2235


Ser Gln  Pro Leu Ala Ser Gly  Ser Arg Ile Gly Ser  Asp Pro Tyr
    2240                2245                2250


Leu Gly  Gln Arg Leu Asp Ser  Glu Ala Ser Ala His  Asn Leu Pro
    2255                2260                2265


Glu Asp  Thr Leu Thr Phe Glu  Glu Ala Val Ala Thr  Asn Ser Gly
    2270                2275                2280


Arg Ser  Ser Arg Thr Ser Tyr  Val Ser Ser Leu Thr  Ser Gln Ser
    2285                2290                2295


His Pro  Leu Arg Arg Val Pro  Asn Gly Tyr His Cys  Thr Leu Gly
    2300                2305                2310


Leu Ser  Thr Gly Val Arg Ala  Arg His Ser Tyr His  His Pro Asp
    2315                2320                2325


Gln Asp  His Trp Cys
    2330


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Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Thr Gly
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ggc ggg gag cgg gct cgg ggc ggc ggg gcc ggc ggg gcc ggt ggc ccg      96
Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
         20                  25                  30

ggc cag ggg ggt ctg ccg ccg ggc cag cgg gtc ctg tac aag cag tcc     144
Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
         35                  40                  45

att gcg caa cgc gca cgg acc atg gcc ctg tac aac ccc atc cca gtc     192
Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
         50                  55                  60

aag cag aac tgc ttc acc gtc aac cgc tcg ctc ttc gtc ttc agc gag     240
Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65                  70                  75                  80

gac aac gtc gtc cgc aaa tat gct aag cgc atc acc gaa tgg ccg ccc     288
Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                 85                  90                  95

ttc gaa tat atg atc ctg gcc acc atc atc gcc aac tgt att gtc ctg     336
Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
                 100                 105                 110

gcc ctg gag cag cac ctc cct gat ggg gac aag act ccc atg tct gaa     384
Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
             115                 120                 125

cga ctg gat gac acg gaa cct tac ttc atc ggc atc ttt tgc ttc gag     432
Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
         130                 135                 140

gcg ggc atc aag atc ata gct ctg ggc ttc gtg ttc cac aaa ggc tcc     480
Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145                 150                 155                 160

tac ctc cgg aat ggc tgg aac gtc atg gac ttc gtg gtg gtc ctc aca     528
Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
                 165                 170                 175

gag att ctt gcc aca gct gga act gac ttt gat ctg cgc acc ctg agg     576
Glu Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
                 180                 185                 190

gct gtg cgt gtg ctt agg ccc ctg aag ttg gtg tct gga att cca agc     624
Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
             195                 200                 205

ttg cag gtg gtg ctc aag tcc atc atg aag gcc atg gtc ccg ctg ctg     672
Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
         210                 215                 220

cag atc ggg ctg ctg ctc ttc ttc gcc atc ctc atg ttc gct atc atc     720
Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225                 230                 235                 240
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ggc ctc gag ttc tat atg ggc aaa ttc cat aag gcc tgc ttc ccc aac        768
Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
            245                 250                 255

agc aca gat gca gag cct gtg ggt gac ttt cct tgt ggc aag gag gcc        816
Ser Thr Asp Ala Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
            260                 265                 270

cct gct cgt ctg tgt gac agt gac acc gaa tgc cgg gag tac tgg cca        864
Pro Ala Arg Leu Cys Asp Ser Asp Thr Glu Cys Arg Glu Tyr Trp Pro
            275                 280                 285

gga ccc aac ttt ggc atc acc aat ttt gac aac atc ctg ttt gcc atc        912
Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
            290                 295                 300

ttg acc gtg ttc cag tgt atc acc atg gag ggc tgg act gac atc ctc        960
Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305                 310                 315                 320

tac aat aca aat gat gcg gcc ggc aac acg tgg aac tgg ttg tac ttc       1008
Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
            325                 330                 335

atc ccc ctc atc atc att ggc tcc ttc ttc atg ctc aac ctg gtg ctc       1056
Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
            340                 345                 350

ggt gtg ctt tca gga gag ttt gcc aaa gag cgg gag cga gtc gag aac       1104
Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
            355                 360                 365

cgc cgt gcc ttc ctg aag ctc cgc agg cag cag cag att gag cga gaa       1152
Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
            370                 375                 380

ctg aat ggg tac ttg gag tgg atc ttc aag gcg gag gaa gtc atg ttg       1200
Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385                 390                 395                 400

gca gag gag gac aag aac gca gaa gag aag tcc cct ttg gat gca gtg       1248
Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Ala Val
            405                 410                 415

ttg aag aga gct gct acc aag aag agc cga aat gac ctc atc cat gca       1296
Leu Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala
            420                 425                 430

gaa gag ggg gag gac cgg ttt gta gac ctc tgt gct gct ggg tct ccc       1344
Glu Glu Gly Glu Asp Arg Phe Val Asp Leu Cys Ala Ala Gly Ser Pro
            435                 440                 445

ttt gct cgt gcc agc ctc aag agt ggg aag aca gag agc tca tcg tac       1392
Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr
            450                 455                 460
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ttc cgg agg aag gag aag atg ttc cgg ttc ctt atc cgt cgt atg gtg       1440
Phe Arg Arg Lys Glu Lys Met Phe Arg Phe Leu Ile Arg Arg Met Val
465                 470                 475                 480

aaa gca cag agc ttc tac tgg gtg gta ctg tgc gtg gtg gcc ctg aac       1488
Lys Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn
                    485                 490                 495

acg ttg tgt gtg gcc atg gta cac tat aat cag cct cag cgg ctt acc       1536
Thr Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr
                500                 505                 510

act gca ctg tac ttt gca gag ttt gtt ttc ctg ggt ctc ttc ctc aca       1584
Thr Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr
                515                 520                 525

gag atg tcc ctg aag atg tac ggt cta ggg ccc aga agc tac ttc cgg       1632
Glu Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg
        530                 535                 540

tct tcc ttc aac tgc ttt gac ttt ggg gtg att gtg ggg agt atc ttt       1680
Ser Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe
545                 550                 555                 560

gaa gta gtc tgg gct gcc atc aag cca gga acc tcc ttc gga atc agt       1728
Glu Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser
                565                 570                 575

gtg ctg cgg gct ctc cga ctg ctg agg att ttc aaa gtc acc aag tat       1776
Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr
                580                 585                 590

tgg aac tcc ctg agg aac ctg gtt gtt tcc ctc ctc aac tcc atg aag       1824
Trp Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys
        595                 600                 605

tcc atc atc agc ctt ctc ttc ctg ctt ttc ctt ttc att gtg gtc ttc       1872
Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe
        610                 615                 620

gct ctg ttg ggg atg cag ctg ttt ggg gga cag ttc aac ttt caa gat       1920
Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp
625                 630                 635                 640

gag act cca acc acc aat ttt gat acc ttc cca gct gcc atc ctc act       1968
Glu Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr
                645                 650                 655

gtg ttt cag att ctg aca gga gag gac tgg aat gca gtc atg tat cat       2016
Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His
                660                 665                 670

ggg att gag tca caa gga gga gtc agc aaa ggc atg ttt tca tcc ttt       2064
Gly Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe
                675                 680                 685

tac ttc atc gtc ctg aca ctg ttt gga aac tac acc ctg ttg aac gtt       2112
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Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val
    690                 695                 700

ttc ttg gcc att gct gtg gac aac ctt gcc aat gcc cag gag ttg acc        2160
Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr
705                 710                 715                 720

aag gat gaa gag gag atg gaa gag gca gcc aat cag aag ctt gct ctt        2208
Lys Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu
                725                 730                 735

cag aag gcc aaa gaa gta gct gaa gtc agc ccc atg tct gct gcc aac        2256
Gln Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn
                740                 745                 750

atc tcc att gct gcc agg cag cag aac tcg gcc aag gcg cgc tca gta        2304
Ile Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val
            755                 760                 765

tgg gag cag cgg gcc agt cag cta agg ctc cag aac ctg cgt gcc agc        2352
Trp Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser
    770                 775                 780

tgt gag gca ctg tac agt gag atg gac ccg gag gag cgc ctg cgt tat        2400
Cys Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr
785                 790                 795                 800

gcc agc acg cgc cac gtg agg cca gac atg aag aca cac atg gac cga        2448
Ala Ser Thr Arg His Val Arg Pro Asp Met Lys Thr His Met Asp Arg
                805                 810                 815

ccc cta gtg gtg gaa cct ggt cgg gat ggc ctg cgg gga ccc gcc ggg        2496
Pro Leu Val Val Glu Pro Gly Arg Asp Gly Leu Arg Gly Pro Ala Gly
                820                 825                 830

aac aag tca aag cct gag ggc acg gag gcc acc gaa ggt gcg gat cca        2544
Asn Lys Ser Lys Pro Glu Gly Thr Glu Ala Thr Glu Gly Ala Asp Pro
                835                 840                 845

cca cgc cga cac cac cgg cat cgt gat agg gac aag acc tca gcc tca        2592
Pro Arg Arg His His Arg His Arg Asp Arg Asp Lys Thr Ser Ala Ser
        850                 855                 860

acc cct gct gga ggc gaa cag gac agg aca gac tgc cca aag gcc gaa        2640
Thr Pro Ala Gly Gly Glu Gln Asp Arg Thr Asp Cys Pro Lys Ala Glu
865                 870                 875                 880

agc acc gag acc ggg gcc cgg gag gaa cgt gcg cgc cct cgt cga agt        2688
Ser Thr Glu Thr Gly Ala Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser
                885                 890                 895

cac agc aag gag gct cca ggg gct gac aca caa gtg cgt tgt gag cgc        2736
His Ser Lys Glu Ala Pro Gly Ala Asp Thr Gln Val Arg Cys Glu Arg
                900                 905                 910

agt aga cgt cac cac cgg cgc gga tcc ccg gag gag gcc act gaa cgg        2784
Ser Arg Arg His His Arg Arg Gly Ser Pro Glu Glu Ala Thr Glu Arg
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              915                    920                      925

gaa cct cgg cgc cac cgt gcc cac cgg cac gca cag gac tca agc aag      2832
Glu Pro Arg Arg His Arg Ala His Arg His Ala Gln Asp Ser Ser Lys
    930                     935                     940

gaa ggc aag gag ggc act gca ccg gtg ctt gta ccc aag ggc gag cgt      2880
Glu Gly Lys Glu Gly Thr Ala Pro Val Leu Val Pro Lys Gly Glu Arg
945                     950                     955               960

cgc gca aga cat cga ggc ccg cgt acg ggc ccc cgt gag aca gag aac      2928
Arg Ala Arg His Arg Gly Pro Arg Thr Gly Pro Arg Glu Thr Glu Asn
                965                     970                     975

agt gag gag ccc aca cgc agg cac cgt gca aag cat aag gtg cca cca      2976
Ser Glu Glu Pro Thr Arg Arg His Arg Ala Lys His Lys Val Pro Pro
                980                     985                     990

aca ctt gag ccc cca gag agg gag  gtt gca gag aag gag  agc aac gtg    3024
Thr Leu Glu Pro Pro Glu Arg Glu  Val Ala Glu Lys Glu  Ser Asn Val
    .995                  1000                    1005

gtg gaa  ggg gat aag gaa act  cga aat cac cag ccc  aag gaa cct       3069
Val Glu  Gly Asp Lys Glu Thr  Arg Asn His Gln Pro  Lys Glu Pro
    1010                 1015                    1020

cgc tgt  gac ctg gag gcc att  gcg gtt aca ggc gtg  ggc tct ctg       3114
Arg Cys  Asp Leu Glu Ala Ile  Ala Val Thr Gly Val  Gly Ser Leu
    1025                 1030                    1035

cac atg  ctg ccc agc acc tgt  ctc cag aaa gtg gac  gaa cag cca       3159
His Met  Leu Pro Ser Thr Cys  Leu Gln Lys Val Asp  Glu Gln Pro
    1040 ·               1045                    1050

gag gat  gca gac aac cag cgt  aat gtc acc cgg atg  ggc agt cag       3204
Glu Asp  Ala Asp Asn Gln Arg  Asn Val Thr Arg Met  Gly Ser Gln
    1055                 1060                    1065

ccc tca  gac ccc agc acc act  gtg cat gtc cca gtg  aca ctg aca       3249
Pro Ser  Asp Pro Ser Thr Thr  Val His Val Pro Val  Thr Leu Thr
    1070                 1075                    1080

ggc cct  ccc ggg gag gcc act  gta gtt ccc agt gct  aac acg gac       3294
Gly Pro  Pro Gly Glu Ala Thr  Val Val Pro Ser Ala  Asn Thr Asp
    1085                 1090                    1095

ctg gaa  ggc caa gcg gag ggc  aag aag gag gca gag  gct gac gat       3339
Leu Glu  Gly Gln Ala Glu Gly  Lys Lys Glu Ala Glu  Ala Asp Asp
    1100                 1105                    1110

gtg ctg  aga aga ggc ccc agg  ccc atc gtt ccc tac  agt tcc atg       3384
Val Leu  Arg Arg Gly Pro Arg  Pro Ile Val Pro Tyr  Ser Ser Met
    1115                 1120                    1125

ttc tgc  ctc agc ccc acc aac  cta ctc cgt cgc ttc  tgc cat tac       3429
Phe Cys  Leu Ser Pro Thr Asn  Leu Leu Arg Arg Phe  Cys His Tyr
    1130                 1135                    1140
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att gtg acc atg cgg tac ttt  gag atg gtg att ctt  gtg gtc atc        3474
Ile Val Thr Met Arg Tyr Phe  Glu Met Val Ile Leu  Val Val Ile
    1145                1150                 1155

gcc ttg agc agc att gcc ctg  gct gct gag gat ccc  gtg cgg acc        3519
Ala Leu Ser Ser Ile Ala Leu  Ala Ala Glu Asp Pro  Val Arg Thr
    1160                1165                 1170

gac tca ttc cgg aac aat gct  ctg aag tac atg gac  tac atc ttt        3564
Asp Ser Phe Arg Asn Asn Ala  Leu Lys Tyr Met Asp  Tyr Ile Phe
    1175                1180                 1185

aca gga gtc ttc acc ttt gag  atg gtc ata aag atg  ata gac ttg        3609
Thr Gly Val Phe Thr Phe Glu  Met Val Ile Lys Met  Ile Asp Leu
    1190                1195                 1200

ggc ctg ctg ctg cac cct ggg  gcc tac ttc cgg gac  ctg tgg aac        3654
Gly Leu Leu Leu His Pro Gly  Ala Tyr Phe Arg Asp  Leu Trp Asn
    1205                1210                 1215

att ctg gac ttc att gtt gtc  agt gga gcc ctg gtg  gca ttt gca        3699
Ile Leu Asp Phe Ile Val Val  Ser Gly Ala Leu Val  Ala Phe Ala
    1220                1225                 1230

ttc tcg agc ttc atg gga gga  tcc aaa ggg aaa gac  atc aat acc        3744
Phe Ser Ser Phe Met Gly Gly  Ser Lys Gly Lys Asp  Ile Asn Thr
    1235                1240                 1245

atc aag tct ctg aga gtc ctg  cga gtc ctg cgg ccc  ctc aag acc        3789
Ile Lys Ser Leu Arg Val Leu  Arg Val Leu Arg Pro  Leu Lys Thr
    1250                1255                 1260

atc aag cgg ctg cct aaa ctc  aag gct gtg ttt gac  tgt gtg gtg        3834
Ile Lys Arg Leu Pro Lys Leu  Lys Ala Val Phe Asp  Cys Val Val
    1265                1270                 1275

aac tct ctg aag aat gtc ttg  aac atc ctg atc gtc  tac atg ctc        3879
Asn Ser Leu Lys Asn Val Leu  Asn Ile Leu Ile Val  Tyr Met Leu
    1280                1285                 1290

ttc atg ttt ata ttt gcc gtc  atc gcc gtc caa ctc  ttc aaa ggg        3924
Phe Met Phe Ile Phe Ala Val  Ile Ala Val Gln Leu  Phe Lys Gly
    1295                1300                 1305

aag ttc ttt tac tgc act gat  gag tcc aag gag ctg  gag cgg gac        3969
Lys Phe Phe Tyr Cys Thr Asp  Glu Ser Lys Glu Leu  Glu Arg Asp
    1310                1315                 1320

tgc agg ggt cag tat ttg gat  tat gag aag gaa gag  gta gaa gcc        4014
Cys Arg Gly Gln Tyr Leu Asp  Tyr Glu Lys Glu Glu  Val Glu Ala
    1325                1330                 1335

cag cca agg cag tgg aag aaa  tat gac ttc cac tat  gac aat gtg        4059
Gln Pro Arg Gln Trp Lys Lys  Tyr Asp Phe His Tyr  Asp Asn Val
    1340                1345                 1350
```

```
ctc tgg gcc ttg ctg act ctg   ttt acg gtg tcc aca   gga gag ggg        4104
Leu Trp Ala Leu Leu Thr Leu   Phe Thr Val Ser Thr   Gly Glu Gly
    1355            1360                 1365

tgg ccc atg gtg ctg aaa cac   tct gtg gac gcc acc   tat gag gag        4149
Trp Pro Met Val Leu Lys His   Ser Val Asp Ala Thr   Tyr Glu Glu
    1370            1375                 1380

cag ggg cca agc ccc ggg ttt   cgg atg gag ctt tcc   atc ttc tat        4194
Gln Gly Pro Ser Pro Gly Phe   Arg Met Glu Leu Ser   Ile Phe Tyr
    1385            1390                 1395

gtg gtc tac ttt gtg gtc ttc   cct ttt ttc ttt gtc   aac atc ttt        4239
Val Val Tyr Phe Val Val Phe   Pro Phe Phe Phe Val   Asn Ile Phe
    1400            1405                 1410

gtg gcc ttg atc atc atc acc   ttc cag gag cag ggg   gac aag gtg        4284
Val Ala Leu Ile Ile Ile Thr   Phe Gln Glu Gln Gly   Asp Lys Val
    1415            1420                 1425

atg tct gag tgc agt ctg gaa   aag aat gag agg gct   tgc att gac        4329
Met Ser Glu Cys Ser Leu Glu   Lys Asn Glu Arg Ala   Cys Ile Asp
    1430            1435                 1440

ttt gcc atc agc gcc aaa ccc   ctg aca cgg tac atg   cct cag aac        4374
Phe Ala Ile Ser Ala Lys Pro   Leu Thr Arg Tyr Met   Pro Gln Asn
    1445            1450                 1455

aag cag tcg ttc cag tat aag   aca tgg aca ttt gtg   gtc tct cca        4419
Lys Gln Ser Phe Gln Tyr Lys   Thr Trp Thr Phe Val   Val Ser Pro
    1460            1465                 1470

ccc ttt gag tac ttc att atg   gcc atg ata gcc ctc   aac aca gtg        4464
Pro Phe Glu Tyr Phe Ile Met   Ala Met Ile Ala Leu   Asn Thr Val
    1475            1480                 1485

gtg ctg atg atg aag ttc tac   gat gcc cct tat gag   tac gag ctg        4509
Val Leu Met Met Lys Phe Tyr   Asp Ala Pro Tyr Glu   Tyr Glu Leu
    1490            1495                 1500

atg ctg aag tgc ttg aac atc   gtc ttc aca tcc atg   ttc tct ctg        4554
Met Leu Lys Cys Leu Asn Ile   Val Phe Thr Ser Met   Phe Ser Leu
    1505            1510                 1515

gag tgc atc ctg aag atc atc   gcc ttc ggg gtg ttg   aac tac ttc        4599
Glu Cys Ile Leu Lys Ile Ile   Ala Phe Gly Val Leu   Asn Tyr Phe
    1520            1525                 1530

aga gat gcc tgg aac gtc ttt   gac ttt gtc act gtt   ttg gga agt        4644
Arg Asp Ala Trp Asn Val Phe   Asp Phe Val Thr Val   Leu Gly Ser
    1535            1540                 1545

att act gat att tta gta acg   gag att gcg aac aac   ttc atc aac        4689
Ile Thr Asp Ile Leu Val Thr   Glu Ile Ala Asn Asn   Phe Ile Asn
    1550            1555                 1560

ttg agc ttc ctt cgc ctc ttc   cgg gca gca cgg ctg   atc aag ctc        4734
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Leu Ser Phe Leu Arg Leu Phe   Arg Ala Ala Arg Leu   Ile Lys Leu
    1565              1570              1575

tgt cgc cag ggc tac acc atc   cgc atc ttg tta tgg   acc ttt gtc        4779
Cys Arg Gln Gly Tyr Thr Ile   Arg Ile Leu Leu Trp   Thr Phe Val
    1580              1585              1590

cag tcc ttt aag gcg ctg ccc   tac gtg tgc ctc ctc   att gcc atg        4824
Gln Ser Phe Lys Ala Leu Pro   Tyr Val Cys Leu Leu   Ile Ala Met
    1595              1600              1605

ctg ttc ttc atc tac gcc atc   atc ggc atg cag gtt   ttt gga aac        4869
Leu Phe Phe Ile Tyr Ala Ile   Ile Gly Met Gln Val   Phe Gly Asn
    1610              1615              1620

att gcc ctt gat gat ggc acc   agc atc aac cga cac   aac aac ttc        4914
Ile Ala Leu Asp Asp Gly Thr   Ser Ile Asn Arg His   Asn Asn Phe
    1625              1630              1635

cgg aca ttt ctg caa gcc tta   atg ctg ttg ttc agg   agt gcc act        4959
Arg Thr Phe Leu Gln Ala Leu   Met Leu Leu Phe Arg   Ser Ala Thr
    1640              1645              1650

ggg gag gcc tgg cac gaa atc   atg ctg tct tgc ctg   ggc aac cgg        5004
Gly Glu Ala Trp His Glu Ile   Met Leu Ser Cys Leu   Gly Asn Arg
    1655              1660              1665

gcc tgc gac cca cat gcc aac   gcc agc gaa tgc ggg   agc gac ttt        5049
Ala Cys Asp Pro His Ala Asn   Ala Ser Glu Cys Gly   Ser Asp Phe
    1670              1675              1680

gcc tat ttt tat ttt gtc tcc   ttc atc ttc ctc tgt   tcc ttt ctg        5094
Ala Tyr Phe Tyr Phe Val Ser   Phe Ile Phe Leu Cys   Ser Phe Leu
    1685              1690              1695

atg ctg aac ctc ttt gtt gct   gtg atc atg gac aat   ttc gaa tac        5139
Met Leu Asn Leu Phe Val Ala   Val Ile Met Asp Asn   Phe Glu Tyr
    1700              1705              1710

ctc acg cgg gat tct tcc atc   cta ggg ccg cac cac   ctc gat gaa        5184
Leu Thr Arg Asp Ser Ser Ile   Leu Gly Pro His His   Leu Asp Glu
    1715              1720              1725

ttc att cgc gtc tgg gct gaa   tac gac cca gct gcg   tgt ggg cgc        5229
Phe Ile Arg Val Trp Ala Glu   Tyr Asp Pro Ala Ala   Cys Gly Arg
    1730              1735              1740

atc agt tac aat gac atg ttt   gag atg ctg aaa cac   atg tcc cca        5274
Ile Ser Tyr Asn Asp Met Phe   Glu Met Leu Lys His   Met Ser Pro
    1745              1750              1755

cct ctg ggt ttg ggg aag aaa   tgc ccg gct cga gtt   gca tac aag        5319
Pro Leu Gly Leu Gly Lys Lys   Cys Pro Ala Arg Val   Ala Tyr Lys
    1760              1765              1770

cgc ctg gtt cga atg aac atg   ccc ata tcc aat gag   gac atg acg        5364
Arg Leu Val Arg Met Asn Met   Pro Ile Ser Asn Glu   Asp Met Thr
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                1775                      1780                          1785

gta cac ttt aca tcc aca ctg  atg gcc ctc atc cgg  acg gca ctg        5409
Val His Phe Thr Ser Thr Leu  Met Ala Leu Ile Arg  Thr Ala Leu
    1790                  1795                 1800

gag atc aag ctt gcc cca gcg  ggg aca aaa cag cac  caa tgt gat        5454
Glu Ile Lys Leu Ala Pro Ala  Gly Thr Lys Gln His  Gln Cys Asp
    1805                  1810                 1815

gct gag ctg agg aag gag atc  tct tct gtg tgg gct  aat ctg ccc        5499
Ala Glu Leu Arg Lys Glu Ile  Ser Ser Val Trp Ala  Asn Leu Pro
    1820                  1825                 1830

cag aag act ctg gac tta ctg  gtg cca ccc cac aaa  cct gac gag        5544
Gln Lys Thr Leu Asp Leu Leu  Val Pro Pro His Lys  Pro Asp Glu
    1835                  1840                 1845

atg aca gtg ggg aag gtc tat  gcg gct ctc atg ata  ttt gac ttc        5589
Met Thr Val Gly Lys Val Tyr  Ala Ala Leu Met Ile  Phe Asp Phe
    1850                  1855                 1860

tac aaa cag aac aaa acc acc  aga gat cag act cac  caa gct cct        5634
Tyr Lys Gln Asn Lys Thr Thr  Arg Asp Gln Thr His  Gln Ala Pro
    1865                  1870                 1875

gga ggc ctg tcc cag atg ggt  cct gtt tcc cta ttc  cat cct ctg        5679
Gly Gly Leu Ser Gln Met Gly  Pro Val Ser Leu Phe  His Pro Leu
    1880                  1885                 1890

aag gcc acc ctg gag cag aca  cag ccc gct gtg ctc  cga gga gct        5724
Lys Ala Thr Leu Glu Gln Thr  Gln Pro Ala Val Leu  Arg Gly Ala
    1895                  1900                 1905

cgg gtt ttc ctt cga caa aag  agt gca act tcc ctc  agc aat ggg        5769
Arg Val Phe Leu Arg Gln Lys  Ser Ala Thr Ser Leu  Ser Asn Gly
    1910                  1915                 1920

ggc gcc ata caa acc cag gaa  agt ggc atc aag gag  tcc ctg tcc        5814
Gly Ala Ile Gln Thr Gln Glu  Ser Gly Ile Lys Glu  Ser Leu Ser
    1925                  1930                 1935

tgg ggc acg cag agg acc cag  gac gta ctt tat gag  gcc aga gca        5859
Trp Gly Thr Gln Arg Thr Gln  Asp Val Leu Tyr Glu  Ala Arg Ala
    1940                  1945                 1950

cct cta gaa cgt ggc cat tct  gca gag atc cct gtg  ggg cag cca        5904
Pro Leu Glu Arg Gly His Ser  Ala Glu Ile Pro Val  Gly Gln Pro
    1955                  1960                 1965

gga gca ctg gct gta gat gtc  cag atg cag aac atg  aca ttg aga        5949
Gly Ala Leu Ala Val Asp Val  Gln Met Gln Asn Met  Thr Leu Arg
    1970                  1975                 1980

gga ccg gat ggg gag ccc cag  cct ggc ctg gag agc  caa ggc cga        5994
Gly Pro Asp Gly Glu Pro Gln  Pro Gly Leu Glu Ser  Gln Gly Arg
    1985                  1990                 1995
```

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gcg gcc  tct atg cca cgc ctg  gcg gca gaa aca cag  ccg gcc cct        6039
Ala Ala  Ser Met Pro Arg Leu  Ala Ala Glu Thr Gln  Pro Ala Pro
    2000              2005                  2010

aat gcc  agc ccc atg aag cgc  tcc atc tcc aca ctg  gct cca cgc        6084
Asn Ala  Ser Pro Met Lys Arg  Ser Ile Ser Thr Leu  Ala Pro Arg
    2015              2020                  2025

ccg cat  ggg act cag ctt tgc  aac aca gtc ctg gac  cgg cca cct        6129
Pro His  Gly Thr Gln Leu Cys  Asn Thr Val Leu Asp  Arg Pro Pro
    2030              2035                  2040

cct agc  cag gtg tcc cat cac  cac cac cac cgc tgc  cac cgg cgc        6174
Pro Ser  Gln Val Ser His His  His His His Arg Cys  His Arg Arg
    2045              2050                  2055

agg gac  aag aag cag agg tcc  ctg gaa aag ggg ccc  agc ctg tct        6219
Arg Asp  Lys Lys Gln Arg Ser  Leu Glu Lys Gly Pro  Ser Leu Ser
    2060              2065                  2070

gtt gac  aca gaa ggt gca cca  agt act gct gca gga  tct ggc ctg        6264
Val Asp  Thr Glu Gly Ala Pro  Ser Thr Ala Ala Gly  Ser Gly Leu
    2075              2080                  2085

ccc cat  gga gaa ggg tcc aca  ggc tgc cgg cgg gag  cgt aag caa        6309
Pro His  Gly Glu Gly Ser Thr  Gly Cys Arg Arg Glu  Arg Lys Gln
    2090              2095                  2100

gag cga  ggc cgg tcc cag gag  cgg agg cag ccc tcc  tcc tct tct        6354
Glu Arg  Gly Arg Ser Gln Glu  Arg Arg Gln Pro Ser  Ser Ser Ser
    2105              2110                  2115

tca gag  aag cag cgc ttc tat  tcc tgt gac cgc ttt  ggg agc cgg        6399
Ser Glu  Lys Gln Arg Phe Tyr  Ser Cys Asp Arg Phe  Gly Ser Arg
    2120              2125                  2130

gag ccc  cca caa cct aag ccc  tcc ctc agt agc cac  ccc ata tcg        6444
Glu Pro  Pro Gln Pro Lys Pro  Ser Leu Ser Ser His  Pro Ile Ser
    2135              2140                  2145

cca aca  gcg gca cta gag cca  gga ccc cac ccg cag  ggc agt ggt        6489
Pro Thr  Ala Ala Leu Glu Pro  Gly Pro His Pro Gln  Gly Ser Gly
    2150              2155                  2160

tcc gtt  aat ggg agc ccc ttg  atg tca aca tct ggt  gct agc acg        6534
Ser Val  Asn Gly Ser Pro Leu  Met Ser Thr Ser Gly  Ala Ser Thr
    2165              2170                  2175

ccg ggc  cga ggt ggg cgg agg  cag ctc ccc cag act  ccc ctg acc        6579
Pro Gly  Arg Gly Gly Arg Arg  Gln Leu Pro Gln Thr  Pro Leu Thr
    2180              2185                  2190

cca cgc  ccc agc atc acc tac  aag acg gcc aat tcc  tcg cct gtc        6624
Pro Arg  Pro Ser Ile Thr Tyr  Lys Thr Ala Asn Ser  Ser Pro Val
    2195              2200                  2205
```

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cac ttt gct gag ggt cag agt  ggc ctt cca gcc ttc  tcc cct ggc        6669
His Phe Ala Glu Gly Gln Ser  Gly Leu Pro Ala Phe  Ser Pro Gly
    2210                2215                 2220

cgt ctc agc cgc ggc ctt tct  gaa cac aat gcc ctg  ctc cag aaa        6714
Arg Leu Ser Arg Gly Leu Ser  Glu His Asn Ala Leu  Leu Gln Lys
    2225                2230                 2235

gag ccc ctg agc cag cct cta  gct tct ggc tcc cgc  att ggc tct        6759
Glu Pro Leu Ser Gln Pro Leu  Ala Ser Gly Ser Arg  Ile Gly Ser
    2240                2245                 2250

gac cct tac cta ggg cag cgt  ctg gac agt gag gcc  tct gcc cac        6804
Asp Pro Tyr Leu Gly Gln Arg  Leu Asp Ser Glu Ala  Ser Ala His
    2255                2260                 2265

aac ctg cct gag gat aca ctc  acc ttt gaa gag gcc  gtg gcc acc        6849
Asn Leu Pro Glu Asp Thr Leu  Thr Phe Glu Glu Ala  Val Ala Thr
    2270                2275                 2280

aac tct ggc cgc tcc tcc agg  act tcc tat gtg tcc  tcc ctc act        6894
Asn Ser Gly Arg Ser Ser Arg  Thr Ser Tyr Val Ser  Ser Leu Thr
    2285                2290                 2295

tcc caa tcc cac cct ctc cgc  cgt gta ccc aat ggc  tac cac tgc        6939
Ser Gln Ser His Pro Leu Arg  Arg Val Pro Asn Gly  Tyr His Cys
    2300                2305                 2310

act ttg gga ctc agc acc ggc  gtc cgg gcg cgg cac  agc tac cac        6984
Thr Leu Gly Leu Ser Thr Gly  Val Arg Ala Arg His  Ser Tyr His
    2315                2320                 2325

cac cca gac cag gat cac tgg  tgc tag                                  7011
His Pro Asp Gln Asp His Trp  Cys
    2330                2335


<210>  30
<211>  2336
<212>  PRT
<213>  Rattus norvegicus

<400>  30

Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Thr Gly
1               5                   10                  15


Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
            20                  25                  30


Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
            35                  40                  45


Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
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                50                      55                      60


Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65                  70                  75                  80


Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                85                  90                  95


Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
            100                 105                 110


Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
        115                 120                 125


Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
        130                 135                 140


Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145                 150                 155                 160


Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
                165                 170                 175


Glu Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
            180                 185                 190


Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
        195                 200                 205


Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
    210                 215                 220


Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225                 230                 235                 240


Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
                245                 250                 255


Ser Thr Asp Ala Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
            260                 265                 270


Pro Ala Arg Leu Cys Asp Ser Asp Thr Glu Cys Arg Glu Tyr Trp Pro
        275                 280                 285
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Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
    290                 295             300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305                 310             315                 320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
                325             330                 335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
            340             345             350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
        355             360             365

Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
    370             375             380

Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385             390             395                 400

Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Ala Val
            405             410             415

Leu Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala
        420             425             430

Glu Glu Gly Glu Asp Arg Phe Val Asp Leu Cys Ala Ala Gly Ser Pro
        435             440             445

Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr
    450             455             460

Phe Arg Arg Lys Glu Lys Met Phe Arg Phe Leu Ile Arg Arg Met Val
465             470             475                 480

Lys Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn
            485             490             495

Thr Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr
        500             505             510
```

Thr Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr
        515   520   525

Glu Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg
        530   535   540

Ser Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe
545   550   555   560

Glu Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser
                565   570   575

Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr
                580   585   590

Trp Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys
                595   600   605

Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe
        610   615   620

Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp
625   630   635   640

Glu Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr
                645   650   655

Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His
                660   665   670

Gly Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe
        675   680   685

Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val
        690   695   700

Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr
705   710   715   720

Lys Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu
                725   730   735

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Gln Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn
        740             745             750

Ile Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val
        755             760             765

Trp Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser
    770             775             780

Cys Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr
785             790             795                         800

Ala Ser Thr Arg His Val Arg Pro Asp Met Lys Thr His Met Asp Arg
            805             810             815

Pro Leu Val Val Glu Pro Gly Arg Asp Gly Leu Arg Gly Pro Ala Gly
        820             825             830

Asn Lys Ser Lys Pro Glu Gly Thr Glu Ala Thr Glu Gly Ala Asp Pro
    835             840             845

Pro Arg Arg His His Arg His Arg Asp Arg Asp Lys Thr Ser Ala Ser
    850             855             860

Thr Pro Ala Gly Gly Glu Gln Asp Arg Thr Asp Cys Pro Lys Ala Glu
865             870             875             880

Ser Thr Glu Thr Gly Ala Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser
            885             890             895

His Ser Lys Glu Ala Pro Gly Ala Asp Thr Gln Val Arg Cys Glu Arg
        900             905             910

Ser Arg Arg His His Arg Arg Gly Ser Pro Glu Glu Ala Thr Glu Arg
    915             920             925

Glu Pro Arg Arg His Arg Ala His Arg His Ala Gln Asp Ser Ser Lys
    930             935             940

Glu Gly Lys Glu Gly Thr Ala Pro Val Leu Val Pro Lys Gly Glu Arg
945             950             955             960

Arg Ala Arg His Arg Gly Pro Arg Thr Gly Pro Arg Glu Thr Glu Asn
```

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                   965                      970                      975


Ser Glu Glu Pro Thr Arg Arg His Arg Ala Lys His Lys Val Pro Pro
            980                     985                     990


Thr Leu Glu Pro Pro Glu Arg Glu  Val Ala Glu Lys Glu  Ser Asn Val
        995                 1000                    1005


Val Glu  Gly Asp Lys Glu Thr  Arg Asn His Gln Pro  Lys Glu Pro
    1010                1015                1020


Arg Cys  Asp Leu Glu Ala Ile  Ala Val Thr Gly Val  Gly Ser Leu
    1025                1030                1035


His Met  Leu Pro Ser Thr Cys  Leu Gln Lys Val Asp  Glu Gln Pro
    1040                1045                1050


Glu Asp  Ala Asp Asn Gln Arg  Asn Val Thr Arg Met  Gly Ser Gln
    1055                1060                1065


Pro Ser  Asp Pro Ser Thr Thr  Val His Val Pro Val  Thr Leu Thr
    1070                1075                1080


Gly Pro  Pro Gly Glu Ala Thr  Val Val Pro Ser Ala  Asn Thr Asp
    1085                1090                1095


Leu Glu  Gly Gln Ala Glu Gly  Lys Lys Glu Ala Glu  Ala Asp Asp
    1100                1105                1110


Val Leu  Arg Arg Gly Pro Arg  Pro Ile Val Pro Tyr  Ser Ser Met
    1115                1120                1125


Phe Cys  Leu Ser Pro Thr Asn  Leu Leu Arg Arg Phe  Cys His Tyr
    1130                1135                1140


Ile Val  Thr Met Arg Tyr Phe  Glu Met Val Ile Leu  Val Val Ile
    1145                1150                1155


Ala Leu  Ser Ser Ile Ala Leu  Ala Ala Glu Asp Pro  Val Arg Thr
    1160                1165                1170


Asp Ser  Phe Arg Asn Asn Ala  Leu Lys Tyr Met Asp  Tyr Ile Phe
    1175                1180                1185
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Thr Gly Val Phe Thr Phe Glu  Met Val Ile Lys Met  Ile Asp Leu
    1190            1195              1200

Gly Leu Leu Leu His Pro Gly  Ala Tyr Phe Arg Asp  Leu Trp Asn
    1205            1210              1215

Ile Leu Asp Phe Ile Val Val  Ser Gly Ala Leu Val  Ala Phe Ala
    1220            1225              1230

Phe Ser Ser Phe Met Gly Gly  Ser Lys Gly Lys Asp  Ile Asn Thr
    1235            1240              1245

Ile Lys Ser Leu Arg Val Leu  Arg Val Leu Arg Pro  Leu Lys Thr
    1250            1255              1260

Ile Lys Arg Leu Pro Lys Leu  Lys Ala Val Phe Asp  Cys Val Val
    1265            1270              1275

Asn Ser Leu Lys Asn Val Leu  Asn Ile Leu Ile Val  Tyr Met Leu
    1280            1285              1290

Phe Met Phe Ile Phe Ala Val  Ile Ala Val Gln Leu  Phe Lys Gly
    1295            1300              1305

Lys Phe Phe Tyr Cys Thr Asp  Glu Ser Lys Glu Leu  Glu Arg Asp
    1310            1315              1320

Cys Arg Gly Gln Tyr Leu Asp  Tyr Glu Lys Glu Glu  Val Glu Ala
    1325            1330              1335

Gln Pro Arg Gln Trp Lys Lys  Tyr Asp Phe His Tyr  Asp Asn Val
    1340            1345              1350

Leu Trp Ala Leu Leu Thr Leu  Phe Thr Val Ser Thr  Gly Glu Gly
    1355            1360              1365

Trp Pro Met Val Leu Lys His  Ser Val Asp Ala Thr  Tyr Glu Glu
    1370            1375              1380

Gln Gly Pro Ser Pro Gly Phe  Arg Met Glu Leu Ser  Ile Phe Tyr
    1385            1390              1395
```

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Val Val  Tyr Phe Val Val Phe  Pro Phe Phe Phe Val  Asn Ile Phe
    1400                 1405                 1410


Val Ala  Leu Ile Ile Ile Thr  Phe Gln Glu Gln Gly  Asp Lys Val
    1415                 1420                 1425


Met Ser  Glu Cys Ser Leu Glu  Lys Asn Glu Arg Ala  Cys Ile Asp
    1430                 1435                 1440


Phe Ala  Ile Ser Ala Lys Pro  Leu Thr Arg Tyr Met  Pro Gln Asn
    1445                 1450                 1455


Lys Gln  Ser Phe Gln Tyr Lys  Thr Trp Thr Phe Val  Val Ser Pro
    1460                 1465                 1470


Pro Phe  Glu Tyr Phe Ile Met  Ala Met Ile Ala Leu  Asn Thr Val
    1475                 1480                 1485


Val Leu  Met Met Lys Phe Tyr  Asp Ala Pro Tyr Glu  Tyr Glu Leu
    1490                 1495                 1500


Met Leu  Lys Cys Leu Asn Ile  Val Phe Thr Ser Met  Phe Ser Leu
    1505                 1510                 1515


Glu Cys  Ile Leu Lys Ile Ile  Ala Phe Gly Val Leu  Asn Tyr Phe
    1520                 1525                 1530


Arg Asp  Ala Trp Asn Val Phe  Asp Phe Val Thr Val  Leu Gly Ser
    1535                 1540                 1545


Ile Thr  Asp Ile Leu Val Thr  Glu Ile Ala Asn Asn  Phe Ile Asn
    1550                 1555                 1560


Leu Ser  Phe Leu Arg Leu Phe  Arg Ala Ala Arg Leu  Ile Lys Leu
    1565                 1570                 1575


Cys Arg  Gln Gly Tyr Thr Ile  Arg Ile Leu Leu Trp  Thr Phe Val
    1580                 1585                 1590


Gln Ser  Phe Lys Ala Leu Pro  Tyr Val Cys Leu Leu  Ile Ala Met
    1595                 1600                 1605
```

Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val Phe Gly Asn
    1610   1615   1620

Ile Ala Leu Asp Asp Gly Thr Ser Ile Asn Arg His Asn Asn Phe
    1625   1630   1635

Arg Thr Phe Leu Gln Ala Leu Met Leu Leu Phe Arg Ser Ala Thr
    1640   1645   1650

Gly Glu Ala Trp His Glu Ile Met Leu Ser Cys Leu Gly Asn Arg
    1655   1660   1665

Ala Cys Asp Pro His Ala Asn Ala Ser Glu Cys Gly Ser Asp Phe
    1670   1675   1680

Ala Tyr Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys Ser Phe Leu
    1685   1690   1695

Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu Tyr
    1700   1705   1710

Leu Thr Arg Asp Ser Ser Ile Leu Gly Pro His His Leu Asp Glu
    1715   1720   1725

Phe Ile Arg Val Trp Ala Glu Tyr Asp Pro Ala Ala Cys Gly Arg
    1730   1735   1740

Ile Ser Tyr Asn Asp Met Phe Glu Met Leu Lys His Met Ser Pro
    1745   1750   1755

Pro Leu Gly Leu Gly Lys Lys Cys Pro Ala Arg Val Ala Tyr Lys
    1760   1765   1770

Arg Leu Val Arg Met Asn Met Pro Ile Ser Asn Glu Asp Met Thr
    1775   1780   1785

Val His Phe Thr Ser Thr Leu Met Ala Leu Ile Arg Thr Ala Leu
    1790   1795   1800

Glu Ile Lys Leu Ala Pro Ala Gly Thr Lys Gln His Gln Cys Asp
    1805   1810   1815

Ala Glu Leu Arg Lys Glu Ile Ser Ser Val Trp Ala Asn Leu Pro

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                1820                      1825                        1830


Gln Lys  Thr Leu Asp Leu Leu  Val Pro Pro His Lys  Pro Asp Glu
    1835                 1840                 1845


Met Thr  Val Gly Lys Val Tyr  Ala Ala Leu Met Ile  Phe Asp Phe
    1850                 1855                 1860


Tyr Lys  Gln Asn Lys Thr Thr  Arg Asp Gln Thr His  Gln Ala Pro
    1865                 1870                 1875


Gly Gly  Leu Ser Gln Met Gly  Pro Val Ser Leu Phe  His Pro Leu
    1880                 1885                 1890


Lys Ala  Thr Leu Glu Gln Thr  Gln Pro Ala Val Leu  Arg Gly Ala
    1895                 1900                 1905


Arg Val  Phe Leu Arg Gln Lys  Ser Ala Thr Ser Leu  Ser Asn Gly
    1910                 1915                 1920


Gly Ala  Ile Gln Thr Gln Glu  Ser Gly Ile Lys Glu  Ser Leu Ser
    1925                 1930                 1935


Trp Gly  Thr Gln Arg Thr Gln  Asp Val Leu Tyr Glu  Ala Arg Ala
    1940                 1945                 1950


Pro Leu  Glu Arg Gly His Ser  Ala Glu Ile Pro Val  Gly Gln Pro
    1955                 1960                 1965


Gly Ala  Leu Ala Val Asp Val  Gln Met Gln Asn Met  Thr Leu Arg
    1970                 1975                 1980


Gly Pro  Asp Gly Glu Pro Gln  Pro Gly Leu Glu Ser  Gln Gly Arg
    1985                 1990                 1995


Ala Ala  Ser Met Pro Arg Leu  Ala Ala Glu Thr Gln  Pro Ala Pro
    2000                 2005                 2010


Asn Ala  Ser Pro Met Lys Arg  Ser Ile Ser Thr Leu  Ala Pro Arg
    2015                 2020                 2025


Pro His  Gly Thr Gln Leu Cys  Asn Thr Val Leu Asp  Arg Pro Pro
    2030                 2035                 2040
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Pro Ser  Gln Val Ser His His  His His His Arg Cys  His Arg Arg
    2045             2050              2055

Arg Asp  Lys Lys Gln Arg Ser  Leu Glu Lys Gly Pro  Ser Leu Ser
    2060             2065              2070

Val Asp  Thr Glu Gly Ala Pro  Ser Thr Ala Ala Gly  Ser Gly Leu
    2075             2080              2085

Pro His  Gly Glu Gly Ser Thr  Gly Cys Arg Arg Glu  Arg Lys Gln
    2090             2095              2100

Glu Arg  Gly Arg Ser Gln Glu  Arg Arg Gln Pro Ser  Ser Ser Ser
    2105             2110              2115

Ser Glu  Lys Gln Arg Phe Tyr  Ser Cys Asp Arg Phe  Gly Ser Arg
    2120             2125              2130

Glu Pro  Pro Gln Pro Lys Pro  Ser Leu Ser Ser His  Pro Ile Ser
    2135             2140              2145

Pro Thr  Ala Ala Leu Glu Pro  Gly Pro His Pro Gln  Gly Ser Gly
    2150             2155              2160

Ser Val  Asn Gly Ser Pro Leu  Met Ser Thr Ser Gly  Ala Ser Thr
    2165             2170              2175

Pro Gly  Arg Gly Gly Arg Arg  Gln Leu Pro Gln Thr  Pro Leu Thr
    2180             2185              2190

Pro Arg  Pro Ser Ile Thr Tyr  Lys Thr Ala Asn Ser  Ser Pro Val
    2195             2200              2205

His Phe  Ala Glu Gly Gln Ser  Gly Leu Pro Ala Phe  Ser Pro Gly
    2210             2215              2220

Arg Leu  Ser Arg Gly Leu Ser  Glu His Asn Ala Leu  Leu Gln Lys
    2225             2230              2235

Glu Pro  Leu Ser Gln Pro Leu  Ala Ser Gly Ser Arg  Ile Gly Ser
    2240             2245              2250
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Asp Pro Tyr Leu Gly Gln Arg Leu Asp Ser Glu Ala Ser Ala His
    2255   2260   2265

Asn Leu Pro Glu Asp Thr Leu Thr Phe Glu Glu Ala Val Ala Thr
    2270   2275   2280

Asn Ser Gly Arg Ser Ser Arg Thr Ser Tyr Val Ser Ser Leu Thr
    2285   2290   2295

Ser Gln Ser His Pro Leu Arg Arg Val Pro Asn Gly Tyr His Cys
    2300   2305   2310

Thr Leu Gly Leu Ser Thr Gly Val Arg Ala Arg His Ser Tyr His
    2315   2320   2325

His Pro Asp Gln Asp His Trp Cys
    2330   2335

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gggatgcacg cggggcccgg gagcc atg gtc cgc ttc ggg gac gag ctg ggc   172
                            Met Val Arg Phe Gly Asp Glu Leu Gly
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ggc cgc tat gga ggc ccc ggc ggc gga gag cgg gcc cgg ggc ggc ggg   220
Gly Arg Tyr Gly Gly Pro Gly Gly Gly Glu Arg Ala Arg Gly Gly Gly
10   15   20   25

gcc ggc ggg gcg ggg ggc ccg ggt ccc ggg ggg ctg cag ccc ggc cag   268
Ala Gly Gly Ala Gly Gly Pro Gly Pro Gly Gly Leu Gln Pro Gly Gln
                30   35   40

cgg gtc ctc tac aag caa tcg atc gcg cag cgc gcg cgg acc atg gcg   316
Arg Val Leu Tyr Lys Gln Ser Ile Ala Gln Arg Ala Arg Thr Met Ala
                45   50   55

ctg tac aac ccc atc ccg gtc aag cag aac tgc ttc acc gtc aac cgc   364

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Leu Tyr Asn Pro Ile Pro Val Lys Gln Asn Cys Phe Thr Val Asn Arg
        60                  65                  70

tcg ctc ttc gtc ttc agc gag gac aac gtc gtc cgc aaa tac gcg aag    412
Ser Leu Phe Val Phe Ser Glu Asp Asn Val Val Arg Lys Tyr Ala Lys
        75                  80                  85

cgc atc acc gag tgg cct cca ttc gag tat atg atc ctg gcc acc atc    460
Arg Ile Thr Glu Trp Pro Pro Phe Glu Tyr Met Ile Leu Ala Thr Ile
90                  95                  100                 105

atc gcc aac tgc atc gtg ctg gcc ctg gag cag cac ctc cct gat ggg    508
Ile Ala Asn Cys Ile Val Leu Ala Leu Glu Gln His Leu Pro Asp Gly
                110                 115                 120

gac aaa acg ccc atg tcc gag cgg ctg gac gac acg gag ccc tat ttc    556
Asp Lys Thr Pro Met Ser Glu Arg Leu Asp Asp Thr Glu Pro Tyr Phe
                125                 130                 135

atc ggg atc ttt tgc ttc gag gca ggg atc aaa atc atc gct ctg ggc    604
Ile Gly Ile Phe Cys Phe Glu Ala Gly Ile Lys Ile Ile Ala Leu Gly
                140                 145                 150

ttt gtc ttc cac aag ggc tct tac ctg cgg aac ggc tgg aac gtc atg    652
Phe Val Phe His Lys Gly Ser Tyr Leu Arg Asn Gly Trp Asn Val Met
        155                 160                 165

gac ttc gtg gtc gtc ctc aca ggg atc ctt gcc acg gct gga act gac    700
Asp Phe Val Val Val Leu Thr Gly Ile Leu Ala Thr Ala Gly Thr Asp
170                 175                 180                 185

ttc gac ctg cga aca ctg agg gct gtg cgt gtg ctg agg ccc ctg aag    748
Phe Asp Leu Arg Thr Leu Arg Ala Val Arg Val Leu Arg Pro Leu Lys
                190                 195                 200

ctg gtg tct ggg att cca agt ttg cag gtg gtg ctc aag tcc atc atg    796
Leu Val Ser Gly Ile Pro Ser Leu Gln Val Val Leu Lys Ser Ile Met
                205                 210                 215

aag gcc atg gtt cca ctc ctg cag att ggg ctg ctt ctc ttc ttt gcc    844
Lys Ala Met Val Pro Leu Leu Gln Ile Gly Leu Leu Leu Phe Phe Ala
                220                 225                 230

atc ctc atg ttt gcc atc att ggc ctg gag ttc tac atg ggc aag ttc    892
Ile Leu Met Phe Ala Ile Ile Gly Leu Glu Phe Tyr Met Gly Lys Phe
        235                 240                 245

cac aag gcc tgt ttc ccc aac agc aca gat gcg gag ccc gtg ggt gac    940
His Lys Ala Cys Phe Pro Asn Ser Thr Asp Ala Glu Pro Val Gly Asp
250                 255                 260                 265

ttc ccc tgt ggc aag gag gcc cca gcc cgg ctg tgc gag ggc gac act    988
Phe Pro Cys Gly Lys Glu Ala Pro Ala Arg Leu Cys Glu Gly Asp Thr
                270                 275                 280

gag tgc cgg gag tac tgg cca gga ccc aac ttt ggc atc acc aac ttt   1036
Glu Cys Arg Glu Tyr Trp Pro Gly Pro Asn Phe Gly Ile Thr Asn Phe
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                 285                      290                      295

gac aat atc ctg ttt gcc atc ttg acg gtg ttc cag tgc atc acc atg    1084
Asp Asn Ile Leu Phe Ala Ile Leu Thr Val Phe Gln Cys Ile Thr Met
        300                      305                      310

gag ggc tgg act gac atc ctc tat aat aca aac gat gcg gcc ggc aac    1132
Glu Gly Trp Thr Asp Ile Leu Tyr Asn Thr Asn Asp Ala Ala Gly Asn
        315                      320                      325

acc tgg aac tgg ctc tac ttc atc cct ctc atc atc atc ggc tcc ttc    1180
Thr Trp Asn Trp Leu Tyr Phe Ile Pro Leu Ile Ile Ile Gly Ser Phe
330                      335                      340                345

ttc atg ctc aac ctg gtg ctg ggc gtg ctc tcg ggg gag ttt gcc aag    1228
Phe Met Leu Asn Leu Val Leu Gly Val Leu Ser Gly Glu Phe Ala Lys
                350                      355                      360

gag cga gag agg gtg gag aac cgc cgc gcc ttc ctg aag ctg cgc cgg    1276
Glu Arg Glu Arg Val Glu Asn Arg Arg Ala Phe Leu Lys Leu Arg Arg
                365                      370                      375

cag cag cag atc gag cga gag ctc aac ggg tac ctg gag tgg atc ttc    1324
Gln Gln Gln Ile Glu Arg Glu Leu Asn Gly Tyr Leu Glu Trp Ile Phe
            380                      385                      390

aag gcg gag gaa gtc atg ctg gcc gag gag gac agg aat gca gag gag    1372
Lys Ala Glu Glu Val Met Leu Ala Glu Glu Asp Arg Asn Ala Glu Glu
        395                      400                      405

aag tcc cct ttg gac gtg ctg aag aga gcg gcc acc aag aag agc aga    1420
Lys Ser Pro Leu Asp Val Leu Lys Arg Ala Ala Thr Lys Lys Ser Arg
410                      415                      420                425

aat gac ctg atc cac gca gag gag gga gag gac cgg ttt gca gat ctc    1468
Asn Asp Leu Ile His Ala Glu Glu Gly Glu Asp Arg Phe Ala Asp Leu
                430                      435                      440

tgt gct gtt gga tcc ccc ttc gcc cgc gcc agc ctc aag agc ggg aag    1516
Cys Ala Val Gly Ser Pro Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys
                445                      450                      455

aca gag agc tcg tca tac ttc cgg agg aag gag aag atg ttc cgg ttt    1564
Thr Glu Ser Ser Ser Tyr Phe Arg Arg Lys Glu Lys Met Phe Arg Phe
            460                      465                      470

ttt atc cgg cgc atg gtg aag gct cag agc ttc tac tgg gtg gtg ctg    1612
Phe Ile Arg Arg Met Val Lys Ala Gln Ser Phe Tyr Trp Val Val Leu
    475                      480                      485

tgc gtg gtg gcc ctg aac aca ctg tgt gtg gcc atg gtg cat tac aac    1660
Cys Val Val Ala Leu Asn Thr Leu Cys Val Ala Met Val His Tyr Asn
490                      495                      500                505

cag ccg cgg cgg ctt acc acg acc ctg tat ttt gca gag ttt gtt ttc    1708
Gln Pro Arg Arg Leu Thr Thr Thr Leu Tyr Phe Ala Glu Phe Val Phe
            510                      515                      520
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ctg ggt ctc ttc ctc aca gag atg tcc ctg aag atg tat ggc ctg ggg    1756
Leu Gly Leu Phe Leu Thr Glu Met Ser Leu Lys Met Tyr Gly Leu Gly
            525                 530                 535

ccc aga agc tac ttc cgg tcc tcc ttc aac tgc ttc gac ttt ggg gtc    1804
Pro Arg Ser Tyr Phe Arg Ser Ser Phe Asn Cys Phe Asp Phe Gly Val
            540                 545                 550

atc gtg ggg agc gtc ttt gaa gtg gtc tgg gcg gcc atc aag ccg gga    1852
Ile Val Gly Ser Val Phe Glu Val Val Trp Ala Ala Ile Lys Pro Gly
            555                 560                 565

agc tcc ttt ggg atc agt gtg ctg cgg gcc ctc cgc ctg ctg agg atc    1900
Ser Ser Phe Gly Ile Ser Val Leu Arg Ala Leu Arg Leu Leu Arg Ile
570                 575                 580                 585

ttc aaa gtc acg aag tac tgg agc tcc ctg cgg aac ctg gtg gtg tcc    1948
Phe Lys Val Thr Lys Tyr Trp Ser Ser Leu Arg Asn Leu Val Val Ser
            590                 595                 600

ctg ctg aac tcc atg aag tcc atc atc agc ctg ctc ttc ttg ctc ttc    1996
Leu Leu Asn Ser Met Lys Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe
            605                 610                 615

ctg ttc att gtg gtc ttc gcc ctg ctg ggg atg cag ctg ttt ggg gga    2044
Leu Phe Ile Val Val Phe Ala Leu Leu Gly Met Gln Leu Phe Gly Gly
            620                 625                 630

cag ttc aac ttc cag gat gag act ccc aca acc aac ttc gac acc ttc    2092
Gln Phe Asn Phe Gln Asp Glu Thr Pro Thr Thr Asn Phe Asp Thr Phe
            635                 640                 645

cct gcc gcc atc ctc act gtc ttc cag atc ctg acg gga gag gac tgg    2140
Pro Ala Ala Ile Leu Thr Val Phe Gln Ile Leu Thr Gly Glu Asp Trp
650                 655                 660                 665

aat gca gtg atg tat cac ggg atc gaa tcg caa ggc ggc gtc agc aaa    2188
Asn Ala Val Met Tyr His Gly Ile Glu Ser Gln Gly Gly Val Ser Lys
            670                 675                 680

ggc atg ttc tcg tcc ttt tac ttc att gtc ctg aca ctg ttc gga aac    2236
Gly Met Phe Ser Ser Phe Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn
            685                 690                 695

tac act ctg ctg aat gtc ttt ctg gcc atc gct gtg gac aac ctg gcc    2284
Tyr Thr Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn Leu Ala
            700                 705                 710

aac gcc caa gag ctg acc aag gat gaa gag gag atg gaa gaa gca gcc    2332
Asn Ala Gln Glu Leu Thr Lys Asp Glu Glu Glu Met Glu Glu Ala Ala
            715                 720                 725

aat cag aag ctt gct ctg caa aag gcc aaa gaa gtg gct gaa gtc agc    2380
Asn Gln Lys Leu Ala Leu Gln Lys Ala Lys Glu Val Ala Glu Val Ser
730                 735                 740                 745
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ccc atg tct gcc gcg aac atc tcc atc gcc gcc agg cag cag aac tcg     2428
Pro Met Ser Ala Ala Asn Ile Ser Ile Ala Ala Arg Gln Gln Asn Ser
            750                 755                 760

gcc aag gcg cgc tcg gtg tgg gag cag cgg gcc agc cag cta cgg ctg     2476
Ala Lys Ala Arg Ser Val Trp Glu Gln Arg Ala Ser Gln Leu Arg Leu
            765                 770                 775

cag aac ctg cgg gcc agc tgc gag gcg ctg tac agc gag atg gac ccc     2524
Gln Asn Leu Arg Ala Ser Cys Glu Ala Leu Tyr Ser Glu Met Asp Pro
            780                 785                 790

gag gag cgg ctg cgc ttc gcc act acg cgc cac ctg cgg ccc gac atg     2572
Glu Glu Arg Leu Arg Phe Ala Thr Thr Arg His Leu Arg Pro Asp Met
    795                 800                 805

aag acg cac ctg gac cgg ccg ctg gtg gtg gag ctg ggc cgc gac ggc     2620
Lys Thr His Leu Asp Arg Pro Leu Val Val Glu Leu Gly Arg Asp Gly
810                 815                 820                 825

gcg cgg ggg ccc gtg gga ggc aaa gcc cga cct gag gct gcg gag gcc     2668
Ala Arg Gly Pro Val Gly Gly Lys Ala Arg Pro Glu Ala Ala Glu Ala
                830                 835                 840

ccc gag ggc gtc gac cct ccg cgc agg cac cac cgg cac cgc gac aag     2716
Pro Glu Gly Val Asp Pro Pro Arg Arg His His Arg His Arg Asp Lys
                845                 850                 855

gac aag acc ccc gcg gcg ggg gac cag gac cga gca gag gcc ccg aag     2764
Asp Lys Thr Pro Ala Ala Gly Asp Gln Asp Arg Ala Glu Ala Pro Lys
            860                 865                 870

gcg gag agc ggg gag ccc ggt gcc cgg gag gag cgg ccg cgg ccg cac     2812
Ala Glu Ser Gly Glu Pro Gly Ala Arg Glu Glu Arg Pro Arg Pro His
    875                 880                 885

cgc agc cac agc aag gag gcc gcg ggg ccc ccg gag gcg cgg agc gag     2860
Arg Ser His Ser Lys Glu Ala Ala Gly Pro Pro Glu Ala Arg Ser Glu
890                 895                 900                 905

cgc ggc cga ggc cca ggc ccc gag ggc ggc cgg cgg cac cac cgg cgc     2908
Arg Gly Arg Gly Pro Gly Pro Glu Gly Gly Arg Arg His His Arg Arg
                910                 915                 920

ggc tcc ccg gag gag gcg gcc gag cgg gag ccc cga cgc cac cgc gcg     2956
Gly Ser Pro Glu Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala
            925                 930                 935

cac cgg cac cag gat ccg agc aag gag tgc gcc ggc gcc aag ggc gag     3004
His Arg His Gln Asp Pro Ser Lys Glu Cys Ala Gly Ala Lys Gly Glu
            940                 945                 950

cgg cgc gcg cgg cac cgc ggc ggc ccc cga gcg ggg ccc cgg gag gcg     3052
Arg Arg Ala Arg His Arg Gly Gly Pro Arg Ala Gly Pro Arg Glu Ala
    955                 960                 965

gag agc ggg gag gag ccg gcg cgg cgg cac cgg gcc cgg cac aag gcg     3100
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Glu Ser Gly Glu Glu Pro Ala Arg Arg His Arg Ala Arg His Lys Ala
970                 975                 980                 985

cag cct gct cac gag gct gtg gag aag gag acc acg gag aag gag  gcc      3148
Gln Pro Ala His Glu Ala Val Glu Lys Glu Thr Thr Glu Lys Glu  Ala
                990                 995                 1000

acg gag aag gag  gct gag ata gtg gaa  gcc gac aag gaa aag  gag         3193
Thr Glu Lys Glu  Ala Glu Ile Val Glu  Ala Asp Lys Glu Lys  Glu
             1005                 1010                 1015

ctc cgg aac cac  cag ccc cgg gag cca  cac tgt gac ctg gag  acc         3238
Leu Arg Asn His  Gln Pro Arg Glu Pro  His Cys Asp Leu Glu  Thr
             1020                 1025                 1030

agt ggg act gtg  act gtg ggt ccc atg  cac aca ctg ccc agc  acc         3283
Ser Gly Thr Val  Thr Val Gly Pro Met  His Thr Leu Pro Ser  Thr
             1035                 1040                 1045

tgt ctc cag aag  gtg gag gaa cag cca  gag gat gca gac aat  cag         3328
Cys Leu Gln Lys  Val Glu Glu Gln Pro  Glu Asp Ala Asp Asn  Gln
             1050                 1055                 1060

cgg aac gtc act  cgc atg ggc agt cag  ccc cca gac ccg aac  act         3373
Arg Asn Val Thr  Arg Met Gly Ser Gln  Pro Pro Asp Pro Asn  Thr
             1065                 1070                 1075

att gta cat atc  cca gtg atg ctg acg  ggc cct ctt ggg gaa  gcc         3418
Ile Val His Ile  Pro Val Met Leu Thr  Gly Pro Leu Gly Glu  Ala
             1080                 1085                 1090

acg gtc gtt ccc  agt ggt aac gtg gac  ctg gaa agc caa gca  gag         3463
Thr Val Val Pro  Ser Gly Asn Val Asp  Leu Glu Ser Gln Ala  Glu
             1095                 1100                 1105

ggg aag aag gag  gtg gaa gcg gat gac  gtg atg agg agc ggc  ccc         3508
Gly Lys Lys Glu  Val Glu Ala Asp Asp  Val Met Arg Ser Gly  Pro
             1110                 1115                 1120

cgg cct atc gtc  cca tac agc tcc atg  ttc tgt tta agc ccc  acc         3553
Arg Pro Ile Val  Pro Tyr Ser Ser Met  Phe Cys Leu Ser Pro  Thr
             1125                 1130                 1135

aac ctg ctc cgc  cgc ttc tgc cac tac  atc gtg acc atg agg  tac         3598
Asn Leu Leu Arg  Arg Phe Cys His Tyr  Ile Val Thr Met Arg  Tyr
             1140                 1145                 1150

ttc gag gtg gtc  att ctc gtg gtc atc  gcc ttg agc agc atc  gcc         3643
Phe Glu Val Val  Ile Leu Val Val Ile  Ala Leu Ser Ser Ile  Ala
             1155                 1160                 1165

ctg gct gct gag  gac cca gtg cgc aca  gac tcg ccc agg aac  aac         3688
Leu Ala Ala Glu  Asp Pro Val Arg Thr  Asp Ser Pro Arg Asn  Asn
             1170                 1175                 1180

gct ctg aaa tac  ctg gat tac att ttc  act ggt gtc ttt acc  ttt         3733
Ala Leu Lys Tyr  Leu Asp Tyr Ile Phe  Thr Gly Val Phe Thr  Phe
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                   1185                      1190                         1195

gag atg gtg ata   aag atg atc gac ttg   gga ctg ctg ctt cac   cct        3778
Glu Met Val Ile   Lys Met Ile Asp Leu   Gly Leu Leu Leu His   Pro
                   1200                     1205                    1210

gga gcc tat ttc   cgg gac ttg tgg aac   att ctg gac ttc att   gtg        3823
Gly Ala Tyr Phe   Arg Asp Leu Trp Asn   Ile Leu Asp Phe Ile   Val
                   1215                     1220                    1225

gtc agt ggc gcc   ctg gtg gcg ttt gct   ttc tca gga tcc aaa   ggg        3868
Val Ser Gly Ala   Leu Val Ala Phe Ala   Phe Ser Gly Ser Lys   Gly
                   1230                     1235                    1240

aaa gac atc aat   acc atc aag tct ctg   aga gtc ctt cgt gtc   ctg        3913
Lys Asp Ile Asn   Thr Ile Lys Ser Leu   Arg Val Leu Arg Val   Leu
                   1245                     1250                    1255

cgg ccc ctc aag   acc atc aaa cgg ctg   ccc aag ctc aag gct   gtg        3958
Arg Pro Leu Lys   Thr Ile Lys Arg Leu   Pro Lys Leu Lys Ala   Val
                   1260                     1265                    1270

ttt gac tgt gtg   gtg aac tcc ctg aag   aat gtc ctc aac atc   ttg        4003
Phe Asp Cys Val   Val Asn Ser Leu Lys   Asn Val Leu Asn Ile   Leu
                   1275                     1280                    1285

att gtc tac atg   ctc ttc atg ttc ata   ttt gcc gtc att gcg   gtg        4048
Ile Val Tyr Met   Leu Phe Met Phe Ile   Phe Ala Val Ile Ala   Val
                   1290                     1295                    1300

cag ctc ttc aaa   ggg aag ttt ttc tac   tgc aca gat gaa tcc   aag        4093
Gln Leu Phe Lys   Gly Lys Phe Phe Tyr   Cys Thr Asp Glu Ser   Lys
                   1305                     1310                    1315

gag ctg gag agg   gac tgc agg ggt cag   tat ttg gat tat gag   aag        4138
Glu Leu Glu Arg   Asp Cys Arg Gly Gln   Tyr Leu Asp Tyr Glu   Lys
                   1320                     1325                    1330

gag gaa gtg gaa   gct cag ccc agg cag   tgg aag aaa tac gac   ttt        4183
Glu Glu Val Glu   Ala Gln Pro Arg Gln   Trp Lys Lys Tyr Asp   Phe
                   1335                     1340                    1345

cac tac gac aat   gtg ctc tgg gct ctg   ctg acg ctg ttc aca   gtg        4228
His Tyr Asp Asn   Val Leu Trp Ala Leu   Leu Thr Leu Phe Thr   Val
                   1350                     1355                    1360

tcc acg gga gaa   ggc tgg ccc atg gtg   ctg aaa cac tcc gtg   gat        4273
Ser Thr Gly Glu   Gly Trp Pro Met Val   Leu Lys His Ser Val   Asp
                   1365                     1370                    1375

gcc acc tat gag   gag cag ggt cca agc   cct ggg tac cgc atg   gag        4318
Ala Thr Tyr Glu   Glu Gln Gly Pro Ser   Pro Gly Tyr Arg Met   Glu
                   1380                     1385                    1390

ctg tcc atc ttc   tac gtg gtc tac ttt   gtg gtc ttt ccc ttc   ttc        4363
Leu Ser Ile Phe   Tyr Val Val Tyr Phe   Val Val Phe Pro Phe   Phe
                   1395                     1400                    1405
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ttc gtc aac atc   ttt gtg gct ttg atc   atc atc acc ttc cag   gag       4408
Phe Val Asn Ile   Phe Val Ala Leu Ile   Ile Ile Thr Phe Gln   Glu
            1410                  1415                  1420

cag ggg gac aag   gtg atg tct gaa tgc   agc ctg gag aag aac   gag       4453
Gln Gly Asp Lys   Val Met Ser Glu Cys   Ser Leu Glu Lys Asn   Glu
            1425                  1430                  1435

agg gct tgc att   gac ttc gcc atc agc   gcc aaa ccc ctg aca   cgg       4498
Arg Ala Cys Ile   Asp Phe Ala Ile Ser   Ala Lys Pro Leu Thr   Arg
            1440                  1445                  1450

tac atg ccc caa   aac cgg cag tcg ttc   cag tat aag acg tgg   aca       4543
Tyr Met Pro Gln   Asn Arg Gln Ser Phe   Gln Tyr Lys Thr Trp   Thr
            1455                  1460                  1465

ttt gtg gtc tcc   ccg ccc ttt gaa tac   ttc atc atg gcc atg   ata       4588
Phe Val Val Ser   Pro Pro Phe Glu Tyr   Phe Ile Met Ala Met   Ile
            1470                  1475                  1480

gcc ctc aac act   gtg gtg ctg atg atg   aag ttc tat gat gca   ccc       4633
Ala Leu Asn Thr   Val Val Leu Met Met   Lys Phe Tyr Asp Ala   Pro
            1485                  1490                  1495

tat gag tac gag   ctg atg ctg aaa tgc   ctg aac atc gtg ttc   aca       4678
Tyr Glu Tyr Glu   Leu Met Leu Lys Cys   Leu Asn Ile Val Phe   Thr
            1500                  1505                  1510

tcc atg ttc tcc   atg gaa tgc gtg ctg   aag atc atc gcc ttt   ggg       4723
Ser Met Phe Ser   Met Glu Cys Val Leu   Lys Ile Ile Ala Phe   Gly
            1515                  1520                  1525

gtg ctg aac tat   ttc aga gat gcc tgg   aat gtc ttt gac ttt   gtc       4768
Val Leu Asn Tyr   Phe Arg Asp Ala Trp   Asn Val Phe Asp Phe   Val
            1530                  1535                  1540

act gtg ttg gga   agt att act gat att   tta gta aca gag att   gcg       4813
Thr Val Leu Gly   Ser Ile Thr Asp Ile   Leu Val Thr Glu Ile   Ala
            1545                  1550                  1555

gaa acg aac aat   ttc atc aac ctc agc   ttc ctc cgc ctc ttt   cga       4858
Glu Thr Asn Asn   Phe Ile Asn Leu Ser   Phe Leu Arg Leu Phe   Arg
            1560                  1565                  1570

gct gcg cgg ctg   atc aag ctg ctc cgc   cag ggc tac acc atc   cgc       4903
Ala Ala Arg Leu   Ile Lys Leu Leu Arg   Gln Gly Tyr Thr Ile   Arg
            1575                  1580                  1585

atc ctg ctg tgg   acc ttt gtc cag tcc   ttc aag gcc ctg ccc   tac       4948
Ile Leu Leu Trp   Thr Phe Val Gln Ser   Phe Lys Ala Leu Pro   Tyr
            1590                  1595                  1600

gtg tgt ctg ctc   att gcc atg ctg ttc   ttc atc tac gcc atc   atc       4993
Val Cys Leu Leu   Ile Ala Met Leu Phe   Phe Ile Tyr Ala Ile   Ile
            1605                  1610                  1615
```

```
ggc atg cag gtg   ttt ggg aat att gcc   ctg gat gat gac acc   agc      5038
Gly Met Gln Val   Phe Gly Asn Ile Ala   Leu Asp Asp Asp Thr   Ser
        1620                  1625                 1630

atc aac cgc cac   aac aac ttc cgg acg   ttt ttg caa gcc ctg   atg      5083
Ile Asn Arg His   Asn Asn Phe Arg Thr   Phe Leu Gln Ala Leu   Met
        1635                  1640                 1645

ctg ctg ttc agg   agc gcc acg ggg gag   gcc tgg cac gag atc   atg      5128
Leu Leu Phe Arg   Ser Ala Thr Gly Glu   Ala Trp His Glu Ile   Met
        1650                  1655                 1660

ctg tcc tgc ctg   agc aac cag gcc tgt   gat gag cag gcc aat   gcc      5173
Leu Ser Cys Leu   Ser Asn Gln Ala Cys   Asp Glu Gln Ala Asn   Ala
        1665                  1670                 1675

acc gag tgt gga   agt gac ttt gcc tac   ttc tac ttc gtc tcc   ttc      5218
Thr Glu Cys Gly   Ser Asp Phe Ala Tyr   Phe Tyr Phe Val Ser   Phe
        1680                  1685                 1690

atc ttc ctg tgc   tcc ttt ctg atg ttg   aac ctc ttt gtg gct   gtg      5263
Ile Phe Leu Cys   Ser Phe Leu Met Leu   Asn Leu Phe Val Ala   Val
        1695                  1700                 1705

atc atg gac aat   ttt gag tac ctc acg   cgg gac tct tcc atc   cta      5308
Ile Met Asp Asn   Phe Glu Tyr Leu Thr   Arg Asp Ser Ser Ile   Leu
        1710                  1715                 1720

ggt cct cac cac   ttg gat gag ttc atc   cgg gtc tgg gct gaa   tac      5353
Gly Pro His His   Leu Asp Glu Phe Ile   Arg Val Trp Ala Glu   Tyr
        1725                  1730                 1735

gac ccg gct gcg   tgt ggg cgc atc agt   tac aat gac atg ttt   gag      5398
Asp Pro Ala Ala   Cys Gly Arg Ile Ser   Tyr Asn Asp Met Phe   Glu
        1740                  1745                 1750

atg ctg aaa cac   atg tcc ccg cct ctg   ggg ctg ggg aag aaa   tgc      5443
Met Leu Lys His   Met Ser Pro Pro Leu   Gly Leu Gly Lys Lys   Cys
        1755                  1760                 1765

cct gct cga gtt   gct tac aag cgc ctg   gtt cgc atg aac atg   ccc      5488
Pro Ala Arg Val   Ala Tyr Lys Arg Leu   Val Arg Met Asn Met   Pro
        1770                  1775                 1780

atc tcc aac gag   gac atg act gtt cac   ttc acg tcc acg ctg   atg      5533
Ile Ser Asn Glu   Asp Met Thr Val His   Phe Thr Ser Thr Leu   Met
        1785                  1790                 1795

gcc ctc atc cgg   acg gca ctg gag atc   aag ctg gcc cca gct   ggg      5578
Ala Leu Ile Arg   Thr Ala Leu Glu Ile   Lys Leu Ala Pro Ala   Gly
        1800                  1805                 1810

aca aag cag cat   cag tgt gac gcg gag   ttg agg aag gag att   tcc      5623
Thr Lys Gln His   Gln Cys Asp Ala Glu   Leu Arg Lys Glu Ile   Ser
        1815                  1820                 1825

gtt gtg tgg gcc   aat ctg ccc cag aag   act ttg gac ttg ctg   gta      5668
```

```
Val Val Trp Ala  Asn Leu Pro Gln Lys  Thr Leu Asp Leu Leu  Val
            1830              1835              1840

cca ccc cat aag  cct gat gag atg aca  gtg ggg aag gtt tat  gca       5713
Pro Pro His Lys  Pro Asp Glu Met Thr  Val Gly Lys Val Tyr  Ala
            1845              1850              1855

gct ctg atg ata  ttt gac ttc tac aag  cag aac aaa acc acc  aga       5758
Ala Leu Met Ile  Phe Asp Phe Tyr Lys  Gln Asn Lys Thr Thr  Arg
            1860              1865              1870

gac cag atg cag  cag gct cct gga ggc  ctc tcc cag atg ggt  cct       5803
Asp Gln Met Gln  Gln Ala Pro Gly Gly  Leu Ser Gln Met Gly  Pro
            1875              1880              1885

gtg tcc ctg ttc  cac cct ctg aag gcc  acc ctg gag cag aca  cag       5848
Val Ser Leu Phe  His Pro Leu Lys Ala  Thr Leu Glu Gln Thr  Gln
            1890              1895              1900

ccg gct gtg ctc  cga gga gcc cgg gtt  ttc ctt cga cag aag  agt       5893
Pro Ala Val Leu  Arg Gly Ala Arg Val  Phe Leu Arg·Gln Lys  Ser
            1905              1910              1915

tcc acc tcc ctc  agc aat ggc ggg gcc  ata caa aac caa gag  agt       5938
Ser Thr Ser Leu  Ser Asn Gly Gly Ala  Ile Gln Asn Gln Glu· Ser
            1920              1925              1930

ggc atc aaa gag  tct gtc tcc tgg ggc  act caa agg acc cag  gat       5983
Gly Ile Lys Glu  Ser Val Ser Trp Gly  Thr Gln Arg Thr Gln  Asp
            1935              1940              1945

gca ccc cat gag  gcc agg cca ccc ctg  gag cgt ggc cac tcc  aca       6028
Ala Pro His Glu  Ala Arg Pro Pro Leu  Glu Arg Gly His Ser  Thr
            1950              1955              1960

gag atc cct gtg  ggg cgg tca gga gca  ctg gct gtg gac gtt  cag       6073
Glu Ile Pro Val  Gly Arg Ser Gly Ala  Leu Ala Val Asp Val  Gln
            1965              1970              1975

atg cag agc ata  acc cgg agg ggc cct  gat ggg gag ccc cag  cct       6118
Met Gln Ser Ile  Thr Arg Arg Gly Pro  Asp Gly Glu Pro Gln  Pro
            1980              1985              1990

ggg ctg gag agc  cag ggt cga gcg gcc  tcc atg ccc cgc ctt  gcg       6163
Gly Leu Glu Ser  Gln Gly Arg Ala Ala  Ser Met Pro Arg Leu  Ala
            1995              2000              2005

gcc gag act cag  ccc gtc aca gat gcc  agc ccc atg aag cgc  tcc       6208
Ala Glu Thr Gln  Pro Val Thr Asp Ala  Ser Pro Met Lys Arg  Ser
            2010              2015              2020

atc tcc acg ctg  gcc cag cgg ccc cgt  ggg act cat ctt tgc  agc       6253
Ile Ser Thr Leu  Ala Gln Arg Pro Arg  Gly Thr His Leu Cys  Ser
            2025              2030              2035

acc acc ccg gac  cgc cca ccc cct agc  cag gcg tcg tcg cac  cac       6298
Thr Thr Pro Asp  Arg Pro Pro Pro Ser  Gln Ala Ser Ser His  His
```

```
                  2040                        2045                        2050

cac cac cac cgc  tgc cac cgc cgc agg  gac agg aag cag agg  tcc          6343
His His His Arg  Cys His Arg Arg Arg  Asp Arg Lys Gln Arg  Ser
            2055                  2060                  2065

ctg gag aag ggg  ccc agc ctg tct gcc  gat atg gat ggc gca  cca          6388
Leu Glu Lys Gly  Pro Ser Leu Ser Ala  Asp Met Asp Gly Ala  Pro
            2070                  2075                  2080

agc agt gct gtg  ggg ccg ggg ctg ccc  ccg gga gag ggg cct  aca          6433
Ser Ser Ala Val  Gly Pro Gly Leu Pro  Pro Gly Glu Gly Pro  Thr
            2085                  2090                  2095

ggc tgc cgg cgg  gaa cga gag cgc cgg  cag gag cgg ggc cgg  tcc          6478
Gly Cys Arg Arg  Glu Arg Glu Arg Arg  Gln Glu Arg Gly Arg  Ser
            2100                  2105                  2110

cag gag cgg agg  cag ccc tca tcc tcc  tcc tcg gag aag cag  cgc          6523
Gln Glu Arg Arg  Gln Pro Ser Ser Ser  Ser Ser Glu Lys Gln  Arg
            2115                  2120                  2125

ttc tac tcc tgc  gac cgc ttt ggg ggc  cgt gag ccc ccg aag  ccc          6568
Phe Tyr Ser Cys  Asp Arg Phe Gly Gly  Arg Glu Pro Pro Lys  Pro
            2130                  2135                  2140

aag ccc tcc ctc  agc agc cac cca acg  tcg cca aca gct ggc  cag          6613
Lys Pro Ser Leu  Ser Ser His Pro Thr  Ser Pro Thr Ala Gly  Gln
            2145                  2150                  2155

gag ccg gga ccc  cac cca cag ggc agt  ggt tcc gtg aat ggg  agc          6658
Glu Pro Gly Pro  His Pro Gln Gly Ser  Gly Ser Val Asn Gly  Ser
            2160                  2165                  2170

ccc ttg ctg tca  aca tct ggt gct agc  acc ccc ggc cgc ggt  ggg          6703
Pro Leu Leu Ser  Thr Ser Gly Ala Ser  Thr Pro Gly Arg Gly  Gly
            2175                  2180                  2185

cgg agg cag ctc  ccc cag acg ccc ctg  act ccc cgc ccc agc  atc          6748
Arg Arg Gln Leu  Pro Gln Thr Pro Leu  Thr Pro Arg Pro Ser  Ile
            2190                  2195                  2200

acc tac aag acg  gcc aac tcc tca ccc  atc cac ttc gcc ggg  gct          6793
Thr Tyr Lys Thr  Ala Asn Ser Ser Pro  Ile His Phe Ala Gly  Ala
            2205                  2210                  2215

cag acc agc ctc  cct gcc ttc tcc cca  ggc cgg ctc agc cgt  ggg          6838
Gln Thr Ser Leu  Pro Ala Phe Ser Pro  Gly Arg Leu Ser Arg  Gly
            2220                  2225                  2230

ctt tcc gaa cac  aac gcc ctg ctg cag  aga gac ccc ctc agc  cag          6883
Leu Ser Glu His  Asn Ala Leu Leu Gln  Arg Asp Pro Leu Ser  Gln
            2235                  2240                  2245

ccc ctg gcc cct  ggc tct cga att ggc  tct gac cct tac ctg  ggg          6928
Pro Leu Ala Pro  Gly Ser Arg Ile Gly  Ser Asp Pro Tyr Leu  Gly
            2250                  2255                  2260
```

```
cag cgt ctg gac  agt gag gcc tct gtc  cac gcc ctg cct gag  gac      6973
Gln Arg Leu Asp  Ser Glu Ala Ser Val  His Ala Leu Pro Glu  Asp
            2265              2270              2275

acg ctc act ttc  gag gag gct gtg gcc  acc aac tcg ggc cgc  tcc      7018
Thr Leu Thr Phe  Glu Glu Ala Val Ala  Thr Asn Ser Gly Arg  Ser
            2280              2285              2290

tcc agg act tcc  tac gtg tcc tcc ctg  acc tcc cag tct cac  cct      7063
Ser Arg Thr Ser  Tyr Val Ser Ser Leu  Thr Ser Gln Ser His  Pro
            2295              2300              2305

ctc cgc cgc gtg  ccc aac ggt tac cac  tgc acc ctg gga ctc  agc      7108
Leu Arg Arg Val  Pro Asn Gly Tyr His  Cys Thr Leu Gly Leu  Ser
            2310              2315              2320

tcg ggt ggc cga  gca cgg cac agc tac  cac cac cct gac caa  gac      7153
Ser Gly Gly Arg  Ala Arg His Ser Tyr  His His Pro Asp Gln  Asp
            2325              2330              2335

cac tgg tgc tag ctgcaccgtg accgctcaga cgcctgcatg cagcaggcgt         7205
His Trp Cys


gtgttccagt ggatgagttt tatcatccac acggggcagt cggccctcgg gggaggcctt   7265

gcccaccttg gtgaggctcc tgtggcccct ccctccccct cctcccctct tttactctag   7325

acgacgaata aagccctgtt gcttgagtgt acgtaccgc                          7364


<210>  32
<211>  2339
<212>  PRT
<213>  Homo sapiens

<400>  32

Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Pro Gly
1               5               10              15


Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
            20              25              30


Gly Pro Gly Gly Leu Gln Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
        35              40              45


Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
    50              55              60


Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65              70              75              80
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Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
             85                      90                      95


Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
             100                 105                 110


Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
             115                 120                 125


Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
             130                 135                 140


Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145                  150                 155                 160


Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
             165                 170                 175


Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
             180                 185                 190


Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
             195                 200                 205


Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
             210                 215                 220


Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225                  230                 235                 240


Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
             245                 250                 255


Ser Thr Asp Ala Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
             260                 265                 270


Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
             275                 280                 285


Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
             290                 295                 300
```

```
Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305                 310             315             320


Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
                325             330             335


Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
            340             345             350


Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
            355             360             365


Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
    370             375             380


Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385             390             395             400


Ala Glu Glu Asp Arg Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
            405             410             415


Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
            420             425             430


Glu Gly Glu Asp Arg Phe Ala Asp Leu Cys Ala Val Gly Ser Pro Phe
            435             440             445


Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
    450             455             460


Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
465             470             475             480


Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
            485             490             495


Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Arg Arg Leu Thr Thr
            500             505             510


Thr Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
    515             520             525
```

Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
    530   535   540

Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Val Phe Glu
545   550   555   560

Val Val Trp Ala Ala Ile Lys Pro Gly Ser Ser Phe Gly Ile Ser Val
                565   570   575

Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
            580   585   590

Ser Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
            595   600   605

Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
    610   615   620

Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625   630   635   640

Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
                645   650   655

Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
            660   665   670

Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe Tyr
        675   680   685

Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
    690   695   700

Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
705   710   715   720

Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
                725   730   735

Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
            740   745   750

Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val Trp

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              755                    760                    765

Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys
    770                 775                 780

Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Phe Ala
785                 790                 795                 800

Thr Thr Arg His Leu Arg Pro Asp Met Lys Thr His Leu Asp Arg Pro
                805                 810                 815

Leu Val Val Glu Leu Gly Arg Asp Gly Ala Arg Gly Pro Val Gly Gly
            820                 825                 830

Lys Ala Arg Pro Glu Ala Ala Glu Ala Pro Glu Gly Val Asp Pro Pro
        835                 840                 845

Arg Arg His His Arg His Arg Asp Lys Asp Lys Thr Pro Ala Ala Gly
    850                 855                 860

Asp Gln Asp Arg Ala Glu Ala Pro Lys Ala Glu Ser Gly Glu Pro Gly
865                 870                 875                 880

Ala Arg Glu Glu Arg Pro Arg Pro His Arg Ser His Ser Lys Glu Ala
            885                 890                 895

Ala Gly Pro Pro Glu Ala Arg Ser Glu Arg Gly Arg Gly Pro Gly Pro
            900                 905                 910

Glu Gly Gly Arg Arg His His Arg Arg Gly Ser Pro Glu Glu Ala Ala
        915                 920                 925

Glu Arg Glu Pro Arg Arg His Arg Ala His Arg His Gln Asp Pro Ser
    930                 935                 940

Lys Glu Cys Ala Gly Ala Lys Gly Glu Arg Arg Ala Arg His Arg Gly
945                 950                 955                 960

Gly Pro Arg Ala Gly Pro Arg Glu Ala Glu Ser Gly Glu Glu Pro Ala
            965                 970                 975

Arg Arg His Arg Ala Arg His Lys Ala Gln Pro Ala His Glu Ala Val
            980                 985                 990
```

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Glu Lys Glu Thr Thr Glu Lys Glu   Ala Thr Glu Lys Glu   Ala Glu Ile
        995                1000                  1005


Val Glu  Ala Asp Lys Glu Lys  Glu Leu Arg Asn His  Gln Pro Arg
    1010                1015                1020


Glu Pro  His Cys Asp Leu Glu  Thr Ser Gly Thr Val  Thr Val Gly
    1025                1030                1035


Pro Met  His Thr Leu Pro Ser  Thr Cys Leu Gln Lys  Val Glu Glu
    1040                1045                1050


Gln Pro  Glu Asp Ala Asp Asn  Gln Arg Asn Val Thr  Arg Met Gly
    1055                1060                1065


Ser Gln  Pro Pro Asp Pro Asn  Thr Ile Val His Ile  Pro Val Met
    1070                1075                1080


Leu Thr  Gly Pro Leu Gly Glu  Ala Thr Val Val Pro  Ser Gly Asn
    1085                1090                1095


Val Asp  Leu Glu Ser Gln Ala  Glu Gly Lys Lys Glu  Val Glu Ala
    1100                1105                1110


Asp Asp  Val Met Arg Ser Gly  Pro Arg Pro Ile Val  Pro Tyr Ser
    1115                1120                1125


Ser Met  Phe Cys Leu Ser Pro  Thr Asn Leu Leu Arg  Arg Phe Cys
    1130                1135                1140


His Tyr  Ile Val Thr Met Arg  Tyr Phe Glu Val Val  Ile Leu Val
    1145                1150                1155


Val Ile  Ala Leu Ser Ser Ile  Ala Leu Ala Ala Glu  Asp Pro Val
    1160                1165                1170


Arg Thr  Asp Ser Pro Arg Asn  Asn Ala Leu Lys Tyr  Leu Asp Tyr
    1175                1180                1185


Ile Phe  Thr Gly Val Phe Thr  Phe Glu Met Val Ile  Lys Met Ile
    1190                1195                1200
```

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Asp Leu  Gly Leu Leu Leu His  Pro Gly Ala Tyr Phe  Arg Asp Leu
    1205             1210             1215

Trp Asn  Ile Leu Asp Phe Ile  Val Val Ser Gly Ala  Leu Val Ala
    1220             1225             1230

Phe Ala  Phe Ser Gly Ser Lys  Gly Lys Asp Ile Asn  Thr Ile Lys
    1235             1240             1245

Ser Leu  Arg Val Leu Arg Val  Leu Arg Pro Leu Lys  Thr Ile Lys
    1250             1255             1260

Arg Leu  Pro Lys Leu Lys Ala  Val Phe Asp Cys Val  Val Asn Ser
    1265             1270             1275

Leu Lys  Asn Val Leu Asn Ile  Leu Ile Val Tyr Met  Leu Phe Met
    1280             1285             1290

Phe Ile  Phe Ala Val Ile Ala  Val Gln Leu Phe Lys  Gly Lys Phe
    1295             1300             1305

Phe Tyr  Cys Thr Asp Glu Ser  Lys Glu Leu Glu Arg  Asp Cys Arg
    1310             1315             1320

Gly Gln  Tyr Leu Asp Tyr Glu  Lys Glu Glu Val Glu  Ala Gln Pro
    1325             1330             1335

Arg Gln  Trp Lys Lys Tyr Asp  Phe His Tyr Asp Asn  Val Leu Trp
    1340             1345             1350

Ala Leu  Leu Thr Leu Phe Thr  Val Ser Thr Gly Glu  Gly Trp Pro
    1355             1360             1365

Met Val  Leu Lys His Ser Val  Asp Ala Thr Tyr Glu  Glu Gln Gly
    1370             1375             1380

Pro Ser  Pro Gly Tyr Arg Met  Glu Leu Ser Ile Phe  Tyr Val Val
    1385             1390             1395

Tyr Phe  Val Val Phe Pro Phe  Phe Phe Val Asn Ile  Phe Val Ala
    1400             1405             1410
```

```
Leu Ile  Ile Ile Thr Phe Gln  Glu Gln Gly Asp Lys  Val Met Ser
    1415             1420             1425


Glu Cys  Ser Leu Glu Lys Asn  Glu Arg Ala Cys Ile  Asp Phe Ala
    1430             1435             1440


Ile Ser  Ala Lys Pro Leu Thr  Arg Tyr Met Pro Gln  Asn Arg Gln
    1445             1450             1455


Ser Phe  Gln Tyr Lys Thr Trp  Thr Phe Val Val Ser  Pro Pro Phe
    1460             1465             1470


Glu Tyr  Phe Ile Met Ala Met  Ile Ala Leu Asn Thr  Val Val Leu
    1475             1480             1485


Met Met  Lys Phe Tyr Asp Ala  Pro Tyr Glu Tyr Glu  Leu Met Leu
    1490             1495             1500


Lys Cys  Leu Asn Ile Val Phe  Thr Ser Met Phe Ser  Met Glu Cys
    1505             1510             1515


Val Leu  Lys Ile Ile Ala Phe  Gly Val Leu Asn Tyr  Phe Arg Asp
    1520             1525             1530


Ala Trp  Asn Val Phe Asp Phe  Val Thr Val Leu Gly  Ser Ile Thr
    1535             1540             1545


Asp Ile  Leu Val Thr Glu Ile  Ala Glu Thr Asn Asn  Phe Ile Asn
    1550             1555             1560


Leu Ser  Phe Leu Arg Leu Phe  Arg Ala Ala Arg Leu  Ile Lys Leu
    1565             1570             1575


Leu Arg  Gln Gly Tyr Thr Ile  Arg Ile Leu Leu Trp  Thr Phe Val
    1580             1585             1590


Gln Ser  Phe Lys Ala Leu Pro  Tyr Val Cys Leu Leu  Ile Ala Met
    1595             1600             1605


Leu Phe  Phe Ile Tyr Ala Ile  Ile Gly Met Gln Val  Phe Gly Asn
    1610             1615             1620


Ile Ala  Leu Asp Asp Asp Thr  Ser Ile Asn Arg His  Asn Asn Phe
```

```
        1625                    1630                    1635

Arg Thr  Phe Leu Gln Ala Leu  Met Leu Leu Phe Arg  Ser Ala Thr
    1640                 1645                 1650

Gly Glu  Ala Trp His Glu Ile  Met Leu Ser Cys Leu  Ser Asn Gln
    1655                 1660                 1665

Ala Cys  Asp Glu Gln Ala Asn  Ala Thr Glu Cys Gly  Ser Asp Phe
    1670                 1675                 1680

Ala Tyr  Phe Tyr Phe Val Ser  Phe Ile Phe Leu Cys  Ser Phe Leu
    1685                 1690                 1695

Met Leu  Asn Leu Phe Val Ala  Val Ile Met Asp Asn  Phe Glu Tyr
    1700                 1705                 1710

Leu Thr  Arg Asp Ser Ser Ile  Leu Gly Pro His His  Leu Asp Glu
    1715                 1720                 1725

Phe Ile  Arg Val Trp Ala Glu  Tyr Asp Pro Ala Ala  Cys Gly Arg
    1730                 1735                 1740

Ile Ser  Tyr Asn Asp Met Phe  Glu Met Leu Lys His  Met Ser Pro
    1745                 1750                 1755

Pro Leu  Gly Leu Gly Lys Lys  Cys Pro Ala Arg Val  Ala Tyr Lys
    1760                 1765                 1770

Arg Leu  Val Arg Met Asn Met  Pro Ile Ser Asn Glu  Asp Met Thr
    1775                 1780                 1785

Val His  Phe Thr Ser Thr Leu  Met Ala Leu Ile Arg  Thr Ala Leu
    1790                 1795                 1800

Glu Ile  Lys Leu Ala Pro Ala  Gly Thr Lys Gln His  Gln Cys Asp
    1805                 1810                 1815

Ala Glu  Leu Arg Lys Glu Ile  Ser Val Val Trp Ala  Asn Leu Pro
    1820                 1825                 1830

Gln Lys  Thr Leu Asp Leu Leu  Val Pro Pro His Lys  Pro Asp Glu
    1835                 1840                 1845
```

```
Met Thr  Val Gly Lys Val Tyr  Ala Ala Leu Met Ile  Phe Asp Phe
    1850              1855              1860

Tyr Lys  Gln Asn Lys Thr Thr  Arg Asp Gln Met Gln  Gln Ala Pro
    1865              1870              1875

Gly Gly  Leu Ser Gln Met Gly  Pro Val Ser Leu Phe  His Pro Leu
    1880              1885              1890

Lys Ala  Thr Leu Glu Gln Thr  Gln Pro Ala Val Leu  Arg Gly Ala
    1895              1900              1905

Arg Val  Phe Leu Arg Gln Lys  Ser Ser Thr Ser Leu  Ser Asn Gly
    1910              1915              1920

Gly Ala  Ile Gln Asn Gln Glu  Ser Gly Ile Lys Glu  Ser Val Ser
    1925              1930              1935

Trp Gly  Thr Gln Arg Thr Gln  Asp Ala Pro His Glu  Ala Arg Pro
    1940              1945              1950

Pro Leu  Glu Arg Gly His Ser  Thr Glu Ile Pro Val  Gly Arg Ser
    1955              1960              1965

Gly Ala  Leu Ala Val Asp Val  Gln Met Gln Ser Ile  Thr Arg Arg
    1970              1975              1980

Gly Pro  Asp Gly Glu Pro Gln  Pro Gly Leu Glu Ser  Gln Gly Arg
    1985              1990              1995

Ala Ala  Ser Met Pro Arg Leu  Ala Ala Glu Thr Gln  Pro Val Thr
    2000              2005              2010

Asp Ala  Ser Pro Met Lys Arg  Ser Ile Ser Thr Leu  Ala Gln Arg
    2015              2020              2025

Pro Arg  Gly Thr His Leu Cys  Ser Thr Thr Pro Asp  Arg Pro Pro
    2030              2035              2040

Pro Ser  Gln Ala Ser Ser His  His His His His Arg  Cys His Arg
    2045              2050              2055
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Arg Arg  Asp Arg Lys Gln Arg  Ser Leu Glu Lys Gly  Pro Ser Leu
    2060              2065              2070

Ser Ala  Asp Met Asp Gly Ala  Pro Ser Ser Ala Val  Gly Pro Gly
    2075              2080              2085

Leu Pro  Pro Gly Glu Gly Pro  Thr Gly Cys Arg Arg  Glu Arg Glu
    2090              2095              2100

Arg Arg  Gln Glu Arg Gly Arg  Ser Gln Glu Arg Arg  Gln Pro Ser
    2105              2110              2115

Ser Ser  Ser Ser Glu Lys Gln  Arg Phe Tyr Ser Cys  Asp Arg Phe
    2120              2125              2130

Gly Gly  Arg Glu Pro Pro Lys  Pro Lys Pro Ser Leu  Ser Ser His
    2135              2140              2145

Pro Thr  Ser Pro Thr Ala Gly  Gln Glu Pro Gly Pro  His Pro Gln
    2150              2155              2160

Gly Ser  Gly Ser Val Asn Gly  Ser Pro Leu Leu Ser  Thr Ser Gly
    2165              2170              2175

Ala Ser  Thr Pro Gly Arg Gly  Gly Arg Arg Gln Leu  Pro Gln Thr
    2180              2185              2190

Pro Leu  Thr Pro Arg Pro Ser  Ile Thr Tyr Lys Thr  Ala Asn Ser
    2195              2200              2205

Ser Pro  Ile His Phe Ala Gly  Ala Gln Thr Ser Leu  Pro Ala Phe
    2210              2215              2220

Ser Pro  Gly Arg Leu Ser Arg  Gly Leu Ser Glu His  Asn Ala Leu
    2225              2230              2235

Leu Gln  Arg Asp Pro Leu Ser  Gln Pro Leu Ala Pro  Gly Ser Arg
    2240              2245              2250

Ile Gly  Ser Asp Pro Tyr Leu  Gly Gln Arg Leu Asp  Ser Glu Ala
    2255              2260              2265
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Ser Val  His Ala Leu Pro Glu  Asp Thr Leu Thr Phe  Glu Glu Ala
    2270             2275             2280

Val Ala  Thr Asn Ser Gly Arg  Ser Ser Arg Thr Ser  Tyr Val Ser
    2285             2290             2295

Ser Leu  Thr Ser Gln Ser His  Pro Leu Arg Arg Val  Pro Asn Gly
    2300             2305             2310

Tyr His  Cys Thr Leu Gly Leu  Ser Ser Gly Gly Arg  Ala Arg His
    2315             2320             2325

Ser Tyr  His His Pro Asp Gln  Asp His Trp Cys
    2330             2335
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gggatgcacg cggggcccgg gagcc atg gtc cgc ttc ggg gac gag ctg ggc     172
                            Met Val Arg Phe Gly Asp Glu Leu Gly
                            1               5

ggc cgc tat gga ggc ccc ggc ggc gga gag cgg gcc cgg ggc ggc ggg    220
Gly Arg Tyr Gly Gly Pro Gly Gly Gly Glu Arg Ala Arg Gly Gly Gly
10                  15                  20                  25

gcc ggc ggg gcg ggg ggc ccg ggt ccc ggg ggg ctg cag ccc ggc cag    268
Ala Gly Gly Ala Gly Gly Pro Gly Pro Gly Gly Leu Gln Pro Gly Gln
                30                  35                  40

cgg gtc ctc tac aag caa tcg atc gcg cag cgc gcg cgg acc atg gcg    316
Arg Val Leu Tyr Lys Gln Ser Ile Ala Gln Arg Ala Arg Thr Met Ala
                45                  50                  55

ctg tac aac ccc atc ccg gtc aag cag aac tgc ttc acc gtc aac cgc    364
Leu Tyr Asn Pro Ile Pro Val Lys Gln Asn Cys Phe Thr Val Asn Arg
            60                  65                  70

tcg ctc ttc gtc ttc agc gag gac aac gtc gtc cgc aaa tac gcg aag    412
Ser Leu Phe Val Phe Ser Glu Asp Asn Val Val Arg Lys Tyr Ala Lys
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cgc atc acc gag tgg cct cca ttc gag tat atg atc ctg gcc acc atc      460
Arg Ile Thr Glu Trp Pro Pro Phe Glu Tyr Met Ile Leu Ala Thr Ile
90              95                  100                 105

atc gcc aac tgc atc gtg ctg gcc ctg gag cag cac ctc cct gat ggg      508
Ile Ala Asn Cys Ile Val Leu Ala Leu Glu Gln His Leu Pro Asp Gly
                110                 115                 120

gac aaa acg ccc atg tcc gag cgg ctg gac gac acg gag ccc tat ttc      556
Asp Lys Thr Pro Met Ser Glu Arg Leu Asp Asp Thr Glu Pro Tyr Phe
                125                 130                 135

atc ggg atc ttt tgc ttc gag gca ggg atc aaa atc atc gct ctg ggc      604
Ile Gly Ile Phe Cys Phe Glu Ala Gly Ile Lys Ile Ile Ala Leu Gly
            140                 145                 150

ttt gtc ttc cac aag ggc tct tac ctg cgg aac ggc tgg aac gtc atg      652
Phe Val Phe His Lys Gly Ser Tyr Leu Arg Asn Gly Trp Asn Val Met
        155                 160                 165

gac ttc gtg gtc gtc ctc aca ggg atc ctt gcc acg gct gga act gac      700
Asp Phe Val Val Val Leu Thr Gly Ile Leu Ala Thr Ala Gly Thr Asp
170                 175                 180                 185

ttc gac ctg cga aca ctg agg gct gtg cgt gtg ctg agg ccc ctg aag      748
Phe Asp Leu Arg Thr Leu Arg Ala Val Arg Val Leu Arg Pro Leu Lys
                190                 195                 200

ctg gtg tct ggg att cca agt ttg cag gtg gtg ctc aag tcc atc atg      796
Leu Val Ser Gly Ile Pro Ser Leu Gln Val Val Leu Lys Ser Ile Met
            205                 210                 215

aag gcc atg gtt cca ctc ctg cag att ggg ctg ctt ctc ttc ttt gcc      844
Lys Ala Met Val Pro Leu Leu Gln Ile Gly Leu Leu Leu Phe Phe Ala
        220                 225                 230

atc ctc atg ttt gcc atc att ggc ctg gag ttc tac atg ggc aag ttc      892
Ile Leu Met Phe Ala Ile Ile Gly Leu Glu Phe Tyr Met Gly Lys Phe
        235                 240                 245

cac aag gcc tgt ttc ccc aac agc aca gat gcg gag ccc gtg ggt gac      940
His Lys Ala Cys Phe Pro Asn Ser Thr Asp Ala Glu Pro Val Gly Asp
250                 255                 260                 265

ttc ccc tgt ggc aag gag gcc cca gcc cgg ctg tgc gag ggc gac act      988
Phe Pro Cys Gly Lys Glu Ala Pro Ala Arg Leu Cys Glu Gly Asp Thr
                270                 275                 280

gag tgc cgg gag tac tgg cca gga ccc aac ttt ggc atc acc aac ttt      1036
Glu Cys Arg Glu Tyr Trp Pro Gly Pro Asn Phe Gly Ile Thr Asn Phe
                285                 290                 295

gac aat atc ctg ttt gcc atc ttg acg gtg ttc cag tgc atc acc atg      1084
Asp Asn Ile Leu Phe Ala Ile Leu Thr Val Phe Gln Cys Ile Thr Met
            300                 305                 310
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gag ggc tgg act gac atc ctc tat aat aca aac gat gcg gcc ggc aac      1132
Glu Gly Trp Thr Asp Ile Leu Tyr Asn Thr Asn Asp Ala Ala Gly Asn
    315                 320                 325

acc tgg aac tgg ctc tac ttc atc cct ctc atc atc atc ggc tcc ttc      1180
Thr Trp Asn Trp Leu Tyr Phe Ile Pro Leu Ile Ile Ile Gly Ser Phe
330                 335                 340                 345

ttc atg ctc aac ctg gtg ctg ggc gtg ctc tcg ggg gag ttt gcc aag      1228
Phe Met Leu Asn Leu Val Leu Gly Val Leu Ser Gly Glu Phe Ala Lys
                350                 355                 360

gag cga gag agg gtg gag aac cgc cgc gcc ttc ctg aag ctg cgc cgg      1276
Glu Arg Glu Arg Val Glu Asn Arg Arg Ala Phe Leu Lys Leu Arg Arg
            365                 370                 375

cag cag cag atc gag cga gag ctc aac ggg tac ctg gag tgg atc ttc      1324
Gln Gln Gln Ile Glu Arg Glu Leu Asn Gly Tyr Leu Glu Trp Ile Phe
            380                 385                 390

aag gcg gag gaa gtc atg ctg gcc gag gag gac agg aat gca gag gag      1372
Lys Ala Glu Glu Val Met Leu Ala Glu Glu Asp Arg Asn Ala Glu Glu
    395                 400                 405

aag tcc cct ttg gac gtg ctg aag aga gcg gcc acc aag aag agc aga      1420
Lys Ser Pro Leu Asp Val Leu Lys Arg Ala Ala Thr Lys Lys Ser Arg
410                 415                 420                 425

aat gac ctg atc cac gca gag gag gga gag gac cgg ttt gca gat ctc      1468
Asn Asp Leu Ile His Ala Glu Glu Gly Glu Asp Arg Phe Ala Asp Leu
                430                 435                 440

tgt gct gtt gga tcc ccc ttc gcc cgc gcc agc ctc aag agc ggg aag      1516
Cys Ala Val Gly Ser Pro Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys
            445                 450                 455

aca gag agc tcg tca tac ttc cgg agg aag gag aag atg ttc cgg ttt      1564
Thr Glu Ser Ser Ser Tyr Phe Arg Arg Lys Glu Lys Met Phe Arg Phe
            460                 465                 470

ttt atc cgg cgc atg gtg aag gct cag agc ttc tac tgg gtg gtg ctg      1612
Phe Ile Arg Arg Met Val Lys Ala Gln Ser Phe Tyr Trp Val Val Leu
    475                 480                 485

tgc gtg gtg gcc ctg aac aca ctg tgt gtg gcc atg gtg cat tac aac      1660
Cys Val Val Ala Leu Asn Thr Leu Cys Val Ala Met Val His Tyr Asn
490                 495                 500                 505

cag ccg cgg cgg ctt acc acg acc ctg tat ttt gca gag ttt gtt ttc      1708
Gln Pro Arg Arg Leu Thr Thr Thr Leu Tyr Phe Ala Glu Phe Val Phe
                510                 515                 520

ctg ggt ctc ttc ctc aca gag atg tcc ctg aag atg tat ggc ctg ggg      1756
Leu Gly Leu Phe Leu Thr Glu Met Ser Leu Lys Met Tyr Gly Leu Gly
            525                 530                 535
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ccc aga agc tac ttc cgg tcc tcc ttc aac tgc ttc gac ttt ggg gtc      1804
Pro Arg Ser Tyr Phe Arg Ser Ser Phe Asn Cys Phe Asp Phe Gly Val
        540             545             550

atc gtg ggg agc gtc ttt gaa gtg gtc tgg gcg gcc atc aag ccg gga      1852
Ile Val Gly Ser Val Phe Glu Val Val Trp Ala Ala Ile Lys Pro Gly
        555             560             565

agc tcc ttt ggg atc agt gtg ctg cgg gcc ctc cgc ctg ctg agg atc      1900
Ser Ser Phe Gly Ile Ser Val Leu Arg Ala Leu Arg Leu Leu Arg Ile
570             575             580             585

ttc aaa gtc acg aag tac tgg agc tcc ctg cgg aac ctg gtg gtg tcc      1948
Phe Lys Val Thr Lys Tyr Trp Ser Ser Leu Arg Asn Leu Val Val Ser
        590             595             600

ctg ctg aac tcc atg aag tcc atc atc agc ctg ctc ttc ttg ctc ttc      1996
Leu Leu Asn Ser Met Lys Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe
        605             610             615

ctg ttc att gtg gtc ttc gcc ctg ctg ggg atg cag ctg ttt ggg gga      2044
Leu Phe Ile Val Val Phe Ala Leu Leu Gly Met Gln Leu Phe Gly Gly
        620             625             630

cag ttc aac ttc cag gat gag act ccc aca acc aac ttc gac acc ttc      2092
Gln Phe Asn Phe Gln Asp Glu Thr Pro Thr Thr Asn Phe Asp Thr Phe
        635             640             645

cct gcc gcc atc ctc act gtc ttc cag atc ctg acg gga gag gac tgg      2140
Pro Ala Ala Ile Leu Thr Val Phe Gln Ile Leu Thr Gly Glu Asp Trp
650             655             660             665

aat gca gtg atg tat cac ggg atc gaa tcg caa ggc ggc gtc agc aaa      2188
Asn Ala Val Met Tyr His Gly Ile Glu Ser Gln Gly Gly Val Ser Lys
            670             675             680

ggc atg ttc tcg tcc ttt tac ttc att gtc ctg aca ctg ttc gga aac      2236
Gly Met Phe Ser Ser Phe Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn
        685             690             695

tac act ctg ctg aat gtc ttt ctg gcc atc gct gtg gac aac ctg gcc      2284
Tyr Thr Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn Leu Ala
        700             705             710

aac gcc caa gag ctg acc aag gat gaa gag gag atg gaa gaa gca gcc      2332
Asn Ala Gln Glu Leu Thr Lys Asp Glu Glu Glu Met Glu Glu Ala Ala
        715             720             725

aat cag aag ctt gct ctg caa aag gcc aaa gaa gtg gct gaa gtc agc      2380
Asn Gln Lys Leu Ala Leu Gln Lys Ala Lys Glu Val Ala Glu Val Ser
730             735             740             745

ccc atg tct gcc gcg aac atc tcc atc gcc gcc agg cag cag aac tcg      2428
Pro Met Ser Ala Ala Asn Ile Ser Ile Ala Ala Arg Gln Gln Asn Ser
            750             755             760

gcc aag gcg cgc tcg gtg tgg gag cag cgg gcc agc cag cta cgg ctg      2476
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Ala Lys Ala Arg Ser Val Trp Glu Gln Arg Ala Ser Gln Leu Arg Leu        .
            765             770             775

cag aac ctg cgg gcc agc tgc gag gcg ctg tac agc gag atg gac ccc      2524
Gln Asn Leu Arg Ala Ser Cys Glu Ala Leu Tyr Ser Glu Met Asp Pro
            780             785             790

gag gag cgg ctg cgc ttc gcc act acg cgc cac ctg cgg ccc gac atg      2572
Glu Glu Arg Leu Arg Phe Ala Thr Thr Arg His Leu Arg Pro Asp Met
            795             800             805

aag acg cac ctg gac cgg ccg ctg gtg gtg gag ctg ggc cgc gac ggc      2620
Lys Thr His Leu Asp Arg Pro Leu Val Val Glu Leu Gly Arg Asp Gly
810                 815             820             825

gcg cgg ggg ccc gtg gga ggc aaa gcc cga cct gag gct gcg gag gcc      2668
Ala Arg Gly Pro Val Gly Gly Lys Ala Arg Pro Glu Ala Ala Glu Ala
                830             835             840

ccc gag ggc gtc gac cct ccg cgc agg cac cac cgg cac cgc gac aag      2716
Pro Glu Gly Val Asp Pro Pro Arg Arg His His Arg His Arg Asp Lys
                845             850             855

gac aag acc ccc gcg gcg ggg gac cag gac cga gca gag gcc ccg aag      2764
Asp Lys Thr Pro Ala Ala Gly Asp Gln Asp Arg Ala Glu Ala Pro Lys
            860             865             870

gcg gag agc ggg gag ccc ggt gcc cgg gag gag cgg ccg cgg ccg cac      2812
Ala Glu Ser Gly Glu Pro Gly Ala Arg Glu Glu Arg Pro Arg Pro His
            875             880             885

cgc agc cac agc aag gag gcc gcg ggg ccc ccg gag gcg cgg agc gag      2860
Arg Ser His Ser Lys Glu Ala Ala Gly Pro Pro Glu Ala Arg Ser Glu
890                 895             900             905

cgc ggc cga ggc cca ggc ccc gag ggc ggc cgg cgg cac cac cgg cgc      2908
Arg Gly Arg Gly Pro Gly Pro Glu Gly Gly Arg Arg His His Arg Arg
                910             915             920

ggc tcc ccg gag gag gcg gcc gag cgg gag ccc cga cgc cac cgc gcg      2956
Gly Ser Pro Glu Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala
            925             930             935

cac cgg cac cag gat ccg agc aag gag tgc gcc ggc gcc aag ggc gag      3004
His Arg His Gln Asp Pro Ser Lys Glu Cys Ala Gly Ala Lys Gly Glu
            940             ·945            950

cgg cgc gcg cgg cac cgc ggc ggc ccc cga gcg ggg ccc cgg gag gcg      3052
Arg Arg Ala Arg His Arg Gly Gly Pro Arg Ala Gly Pro Arg Glu Ala
            955             960             965

gag agc ggg gag gag ccg gcg cgg cgg cac cgg gcc cgg cac aag gcg      3100
Glu Ser Gly Glu Glu Pro Ala Arg Arg His Arg Ala Arg His Lys Ala
970                 975             980             985

cag cct gct cac gag gct gtg gag aag gag acc acg gag aag gag   gcc    3148
Gln Pro Ala His Glu Ala Val Glu Lys Glu Thr Thr Glu Lys Glu   Ala
```

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                    990                  995                 1000
acg gag aag gag  gct gag ata gtg gaa  gcc gac aag gaa aag  gag      3193
Thr Glu Lys Glu  Ala Glu Ile Val Glu  Ala Asp Lys Glu Lys  Glu
            1005                 1010                 1015

ctc cgg aac cac  cag ccc cgg gag cca  cac tgt gac ctg gag  acc      3238
Leu Arg Asn His  Gln Pro Arg Glu Pro  His Cys Asp Leu Glu  Thr
            1020                 1025                 1030

agt ggg act gtg  act gtg ggt ccc atg  cac aca ctg ccc agc  acc      3283
Ser Gly Thr Val  Thr Val Gly Pro Met  His Thr Leu Pro Ser  Thr
            1035                 1040                 1045

tgt ctc cag aag  gtg gag gaa cag cca  gag gat gca gac aat  cag      3328
Cys Leu Gln Lys  Val Glu Glu Gln Pro  Glu Asp Ala Asp Asn  Gln
            1050                 1055                 1060

cgg aac gtc act  cgc atg ggc agt cag  ccc cca gac ccg aac  act      3373
Arg Asn Val Thr  Arg Met Gly Ser Gln  Pro Pro Asp Pro Asn  Thr
            1065                 1070                 1075

att gta cat atc  cca gtg atg ctg acg  ggc cct ctt ggg gaa  gcc      3418
Ile Val His Ile  Pro Val Met Leu Thr  Gly Pro Leu Gly Glu  Ala
            1080                 1085                 1090

acg gtc gtt ccc  agt ggt aac gtg gac  ctg gaa agc caa gca  gag      3463
Thr Val Val Pro  Ser Gly Asn Val Asp  Leu Glu Ser Gln Ala  Glu
            1095                 1100                 1105

ggg aag aag gag  gtg gaa gcg gat gac  gtg atg agg agc ggc  ccc      3508
Gly Lys Lys Glu  Val Glu Ala Asp Asp  Val Met Arg Ser Gly  Pro
            1110                 1115                 1120

cgg cct atc gtc  cca tac agc tcc atg  ttc tgt tta agc ccc  acc      3553
Arg Pro Ile Val  Pro Tyr Ser Ser Met  Phe Cys Leu Ser Pro  Thr
            1125                 1130                 1135

aac ctg ctc cgc  cgc ttc tgc cac tac  atc gtg acc atg agg  tac      3598
Asn Leu Leu Arg  Arg Phe Cys His Tyr  Ile Val Thr Met Arg  Tyr
            1140                 1145                 1150

ttc gag gtg gtc  att ctc gtg gtc atc  gcc ttg agc agc atc  gcc      3643
Phe Glu Val Val  Ile Leu Val Val Ile  Ala Leu Ser Ser Ile  Ala
            1155                 1160                 1165

ctg gct gct gag  gac cca gtg cgc aca  gac tcg ccc agg aac  aac      3688
Leu Ala Ala Glu  Asp Pro Val Arg Thr  Asp Ser Pro Arg Asn  Asn
            1170                 1175                 1180

gct ctg aaa tac  ctg gat tac att ttc  act ggt gtc ttt acc  ttt      3733
Ala Leu Lys Tyr  Leu Asp Tyr Ile Phe  Thr Gly Val Phe Thr  Phe
            1185                 1190                 1195

gag atg gtg ata  aag atg atc gac ttg  gga ctg ctg ctt cac  cct      3778
Glu Met Val Ile  Lys Met Ile Asp Leu  Gly Leu Leu Leu His  Pro
            1200                 1205                 1210
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gga gcc tat ttc  cgg gac ttg tgg aac  att ctg gac ttc att  gtg      3823
Gly Ala Tyr Phe  Arg Asp Leu Trp Asn  Ile Leu Asp Phe Ile  Val
        1215                 1220                 1225

gtc agt ggc gcc  ctg gtg gcg ttt gct  ttc tca gga tcc aaa  ggg      3868
Val Ser Gly Ala  Leu Val Ala Phe Ala  Phe Ser Gly Ser Lys  Gly
        1230                 1235                 1240

aaa gac atc aat  acc atc aag tct ctg  aga gtc ctt cgt gtc  ctg      3913
Lys Asp Ile Asn  Thr Ile Lys Ser Leu  Arg Val Leu Arg Val  Leu
        1245                 1250                 1255

cgg ccc ctc aag  acc atc aaa cgg ctg  ccc aag ctc aag gct  gtg      3958
Arg Pro Leu Lys  Thr Ile Lys Arg Leu  Pro Lys Leu Lys Ala  Val
        1260                 1265                 1270

ttt gac tgt gtg  gtg aac tcc ctg aag  aat gtc ctc aac atc  ttg      4003
Phe Asp Cys Val  Val Asn Ser Leu Lys  Asn Val Leu Asn Ile  Leu
        1275                 1280                 1285

att gtc tac atg  ctc ttc atg ttc ata  ttt gcc gtc att gcg  gtg      4048
Ile Val Tyr Met  Leu Phe Met Phe Ile  Phe Ala Val Ile Ala  Val
        1290                 1295                 1300

cag ctc ttc aaa  ggg aag ttt ttc tac  tgc aca gat gaa tcc  aag      4093
Gln Leu Phe Lys  Gly Lys Phe Phe Tyr  Cys Thr Asp Glu Ser  Lys
        1305                 1310                 1315

gag ctg gag agg  gac tgc agg ggt cag  tat ttg gat tat gag  aag      4138
Glu Leu Glu Arg  Asp Cys Arg Gly Gln  Tyr Leu Asp Tyr Glu  Lys
        1320                 1325                 1330

gag gaa gtg gaa  gct cag ccc agg cag  tgg aag aaa tac gac  ttt      4183
Glu Glu Val Glu  Ala Gln Pro Arg Gln  Trp Lys Lys Tyr Asp  Phe
        1335                 1340                 1345

cac tac gac aat  gtg ctc tgg gct ctg  ctg acg ctg ttc aca  gtg      4228
His Tyr Asp Asn  Val Leu Trp Ala Leu  Leu Thr Leu Phe Thr  Val
        1350                 1355                 1360

tcc acg gga gaa  ggc tgg ccc atg gtg  ctg aaa cac tcc gtg  gat      4273
Ser Thr Gly Glu  Gly Trp Pro Met Val  Leu Lys His Ser Val  Asp
        1365                 1370                 1375

gcc acc tat gag  gag cag ggt cca agc  cct ggg tac cgc atg  gag      4318
Ala Thr Tyr Glu  Glu Gln Gly Pro Ser  Pro Gly Tyr Arg Met  Glu
        1380                 1385                 1390

ctg tcc atc ttc  tac gtg gtc tac ttt  gtg gtc ttt ccc ttc  ttc      4363
Leu Ser Ile Phe  Tyr Val Val Tyr Phe  Val Val Phe Pro Phe  Phe
        1395                 1400                 1405

ttc gtc aac atc  ttt gtg gct ttg atc  atc atc acc ttc cag  gag      4408
Phe Val Asn Ile  Phe Val Ala Leu Ile  Ile Ile Thr Phe Gln  Glu
        1410                 1415                 1420
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cag ggg gac aag  gtg atg tct gaa tgc  agc ctg gag aag aac  gag      4453
Gln Gly Asp Lys  Val Met Ser Glu Cys  Ser Leu Glu Lys Asn  Glu
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agg gct tgc att  gac ttc gcc atc agc  gcc aaa ccc ctg aca  cgg      4498
Arg Ala Cys Ile  Asp Phe Ala Ile Ser  Ala Lys Pro Leu Thr  Arg
        1440                 1445                 1450

tac atg ccc caa  aac cgg cag tcg ttc  cag tat aag acg tgg  aca      4543
Tyr Met Pro Gln  Asn Arg Gln Ser Phe  Gln Tyr Lys Thr Trp  Thr
        1455                 1460                 1465

ttt gtg gtc tcc  ccg ccc ttt gaa tac  ttc atc atg gcc atg  ata      4588
Phe Val Val Ser  Pro Pro Phe Glu Tyr  Phe Ile Met Ala Met  Ile
        1470                 1475                 1480

gcc ctc aac act  gtg gtg ctg atg atg  aag ttc tat gat gca  ccc      4633
Ala Leu Asn Thr  Val Val Leu Met Met  Lys Phe Tyr Asp Ala  Pro
        1485                 1490                 1495

tat gag tac gag  ctg atg ctg aaa tgc  ctg aac atc gtg ttc  aca      4678
Tyr Glu Tyr Glu  Leu Met Leu Lys Cys  Leu Asn Ile Val Phe  Thr
        1500                 1505                 1510

tcc atg ttc tcc  atg gaa tgc gtg ctg  aag atc atc gcc ttt  ggg      4723
Ser Met Phe Ser  Met Glu Cys Val Leu  Lys Ile Ile Ala Phe  Gly
        1515                 1520                 1525

gtg ctg aac tat  ttc aga gat gcc tgg  aat gtc ttt gac ttt  gtc      4768
Val Leu Asn Tyr  Phe Arg Asp Ala Trp  Asn Val Phe Asp Phe  Val
        1530                 1535                 1540

act gtg ttg gga  agt att act gat att  tta gta aca gag att  gcg      4813
Thr Val Leu Gly  Ser Ile Thr Asp Ile  Leu Val Thr Glu Ile  Ala
        1545                 1550                 1555

gaa acg aac aat  ttc atc aac ctc agc  ttc ctc cgc ctc ttt  cga      4858
Glu Thr Asn Asn  Phe Ile Asn Leu Ser  Phe Leu Arg Leu Phe  Arg
        1560                 1565                 1570

gct gcg cgg ctg  atc aag ctg ctc cgc  cag ggc tac acc atc  cgc      4903
Ala Ala Arg Leu  Ile Lys Leu Leu Arg  Gln Gly Tyr Thr Ile  Arg
        1575                 1580                 1585

atc ctg ctg tgg  acc ttt gtc cag tcc  ttc aag gcc ctg ccc  tac      4948
Ile Leu Leu Trp  Thr Phe Val Gln Ser  Phe Lys Ala Leu Pro  Tyr
        1590                 1595                 1600

gtg tgt ctg ctc  att gcc atg ctg ttc  ttc atc tac gcc atc  atc      4993
Val Cys Leu Leu  Ile Ala Met Leu Phe  Phe Ile Tyr Ala Ile  Ile
        1605                 1610                 1615

ggc atg cag gtg  ttt ggg aat att gcc  ctg gat gat gac acc  agc      5038
Gly Met Gln Val  Phe Gly Asn Ile Ala  Leu Asp Asp Asp Thr  Ser
        1620                 1625                 1630

atc aac cgc cac  aac aac ttc cgg acg  ttt ttg caa gcc ctg  atg      5083
```

```
Ile Asn Arg His  Asn Asn Phe Arg Thr  Phe Leu Gln Ala Leu  Met
            1635             1640                 1645

ctg ctg ttc agg  agc gcc acg ggg gag  gcc tgg cac gag atc  atg      5128
Leu Leu Phe Arg  Ser Ala Thr Gly Glu  Ala Trp His Glu Ile  Met
            1650             1655                 1660

ctg tcc tgc ctg  agc aac cag gcc tgt  gat gag cag gcc aat  gcc      5173
Leu Ser Cys Leu  Ser Asn Gln Ala Cys  Asp Glu Gln Ala Asn  Ala
            1665             1670                 1675

acc gag tgt gga  agt gac ttt gcc tac  ttc tac ttc gtc tcc  ttc      5218
Thr Glu Cys Gly  Ser Asp Phe Ala Tyr  Phe Tyr Phe Val Ser  Phe
            1680             1685                 1690

atc ttc ctg tgc  tcc ttt ctg atg ttg  aac ctc ttt gtg gct  gtg      5263
Ile Phe Leu Cys  Ser Phe Leu Met Leu  Asn Leu Phe Val Ala  Val
            1695             1700                 1705

atc atg gac aat  ttt gag tac ctc acg  cgg gac tct tcc atc  cta      5308
Ile Met Asp Asn  Phe Glu Tyr Leu Thr  Arg Asp Ser Ser Ile  Leu
            1710             1715                 1720

ggt cct cac cac  ttg gat gag ttc atc  cgg gtc tgg gct gaa  tac      5353
Gly Pro His His  Leu Asp Glu Phe Ile  Arg Val Trp Ala Glu  Tyr
            1725             1730                 1735

gac ccg gct gcg  tgt ggg cgc atc agt  tac aat gac atg ttt  gag      5398
Asp Pro Ala Ala  Cys Gly Arg Ile Ser  Tyr Asn Asp Met Phe  Glu
            1740             1745                 1750

atg ctg aaa cac  atg tcc ccg cct ctg  ggg ctg ggg aag aaa  tgc      5443
Met Leu Lys His  Met Ser Pro Pro Leu  Gly Leu Gly Lys Lys  Cys
            1755             1760                 1765

cct gct cga gtt  gct tac aag cgc ctg  gtt cgc atg aac atg  ccc      5488
Pro Ala Arg Val  Ala Tyr Lys Arg Leu  Val Arg Met Asn Met  Pro
            1770             1775                 1780

atc tcc aac gag  gac atg act gtt cac  ttc acg tcc acg ctg  atg      5533
Ile Ser Asn Glu  Asp Met Thr Val His  Phe Thr Ser Thr Leu  Met
            1785             1790                 1795

gcc ctc atc cgg  acg gca ctg gag atc  aag ctg gcc cca gct  ggg      5578
Ala Leu Ile Arg  Thr Ala Leu Glu Ile  Lys Leu Ala Pro Ala  Gly
            1800             1805                 1810

aca aag cag cat  cag tgt gac gcg gag  ttg agg aag gag att  tcc      5623
Thr Lys Gln His  Gln Cys Asp Ala Glu  Leu Arg Lys Glu Ile  Ser
            1815             1820                 1825

gtt gtg tgg gcc  aat ctg ccc cag aag  act ttg gac ttg ctg  gta      5668
Val Val Trp Ala  Asn Leu Pro Gln Lys  Thr Leu Asp Leu Leu  Val
            1830             1835                 1840

cca ccc cat aag  cct gat gag atg aca  gtg ggg aag gtt tat  gca      5713
Pro Pro His Lys  Pro Asp Glu Met Thr  Val Gly Lys Val Tyr  Ala
```

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                 1845                      1850                      1855

gct ctg atg ata  ttt gac ttc tac aag  cag aac aaa acc acc  aga     5758
Ala Leu Met Ile  Phe Asp Phe Tyr Lys  Gln Asn Lys Thr Thr  Arg
             1860                  1865                 1870

gac cag atg cag  cag gct cct gga ggc  ctc tcc cag atg ggt  cct     5803
Asp Gln Met Gln  Gln Ala Pro Gly Gly  Leu Ser Gln Met Gly  Pro
             1875                  1880                 1885

gtg tcc ctg ttc  cac cct ctg aag gcc  acc ctg gag cag aca  cag     5848
Val Ser Leu Phe  His Pro Leu Lys Ala  Thr Leu Glu Gln Thr  Gln
             1890                  1895                 1900

ccg gct gtg ctc  cga gga gcc cgg gtt  ttc ctt cga cag aag  agt     5893
Pro Ala Val Leu  Arg Gly Ala Arg Val  Phe Leu Arg Gln Lys  Ser
             1905                  1910                 1915

tcc acc tcc ctc  agc aat ggc ggg gcc  ata caa aac caa gag  agt     5938
Ser Thr Ser Leu  Ser Asn Gly Gly Ala  Ile Gln Asn Gln Glu  Ser
             1920                  1925                 1930

ggc atc aaa gag  tct gtc tcc tgg ggc  act caa agg acc cag  gat     5983
Gly Ile Lys Glu  Ser Val Ser Trp Gly  Thr Gln Arg Thr Gln  Asp
             1935                  1940                 1945

gca ccc cat gag  gcc agg cca ccc ctg  gag cgt ggc cac tcc  aca     6028
Ala Pro His Glu  Ala Arg Pro Pro Leu  Glu Arg Gly His Ser  Thr
             1950                  1955                 1960

gag atc cct gtg  ggg cgg tca gga gca  ctg gct gtg gac gtt  cag     6073
Glu Ile Pro Val  Gly Arg Ser Gly Ala  Leu Ala Val Asp Val  Gln
             1965                  1970                 1975

atg cag agc ata  acc cgg agg ggc cct  gat ggg gag ccc cag  cct     6118
Met Gln Ser Ile  Thr Arg Arg Gly Pro  Asp Gly Glu Pro Gln  Pro
             1980                  1985                 1990

ggg ctg gag agc  cag ggt cga gcg gcc  tcc atg ccc cgc ctt  gcg     6163
Gly Leu Glu Ser  Gln Gly Arg Ala Ala  Ser Met Pro Arg Leu  Ala
             1995                  2000                 2005

gcc gag act cag  ccc gtc aca gat gcc  agc ccc atg aag cgc  tcc     6208
Ala Glu Thr Gln  Pro Val Thr Asp Ala  Ser Pro Met Lys Arg  Ser
             2010                  2015                 2020

atc tcc acg ctg  gcc cag cgg ccc cgt  ggg act cat ctt tgc  agc     6253
Ile Ser Thr Leu  Ala Gln Arg Pro Arg  Gly Thr His Leu Cys  Ser
             2025                  2030                 2035

acc acc ccg gac  cgc cca ccc cct agc  cag gcg tcg tcg cac  cac     6298
Thr Thr Pro Asp  Arg Pro Pro Pro Ser  Gln Ala Ser Ser His  His
             2040                  2045                 2050

cac cac cac cgc  tgc cac cgc cgc agg  gac agg aag cag agg  tcc     6343
His His His Arg  Cys His Arg Arg Arg  Asp Arg Lys Gln Arg  Ser
             2055                  2060                 2065
```

```
ctg gag aag ggg   ccc agc ctg tct gcc   gat atg gat ggc gca   cca        6388
Leu Glu Lys Gly · Pro Ser Leu Ser Ala   Asp Met Asp Gly Ala   Pro
            2070          2075                       2080

agc agt gct gtg   ggg ccg ggg ctg ccc   ccg gga gag ggg cct   aca        6433
Ser Ser Ala Val   Gly Pro Gly Leu Pro   Pro Gly Glu Gly Pro   Thr
            2085          2090                       2095

ggc tgc cgg cgg   gaa cga gag cgc cgg   cag gag cgg ggc cgg   tcc        6478
Gly Cys Arg Arg   Glu Arg Glu Arg Arg   Gln Glu Arg Gly Arg   Ser
            2100          2105                       2110

cag gag cgg agg   cag ccc tca tcc tcc   tcc tcg gag aag cag   cgc        6523
Gln Glu Arg Arg   Gln Pro Ser Ser Ser   Ser Ser Glu Lys Gln   Arg
            2115          2120                       2125

ttc tac tcc tgc   gac cgc ttt ggg ggc   cgt gag ccc ccg aag   ccc        6568
Phe Tyr Ser Cys   Asp Arg Phe Gly Gly   Arg Glu Pro Pro Lys   Pro
            2130          2135                       2140

aag ccc tcc ctc   agc agc cac cca acg   tcg cca aca gct ggc   cag        6613
Lys Pro Ser Leu   Ser Ser His Pro Thr   Ser Pro Thr Ala Gly   Gln
            2145          2150                       2155

gag ccg gga ccc   cac cca cag gcc ggc   tca gcc gtg ggc ttt   ccg        6658
Glu Pro Gly Pro   His Pro Gln Ala Gly   Ser Ala Val Gly Phe   Pro
            2160          2165                       2170

aac aca acg ccc   tgc tgc aga gag acc   ccc tca gcc agc ccc   tgg        6703
Asn Thr Thr Pro   Cys Cys Arg Glu Thr   Pro Ser Ala Ser Pro   Trp
            2175          2180                       2185

ccc ctg gct ctc   gaa ttg gct ctg acc   ctt acc tgg ggc agc   gtc        6748
Pro Leu Ala Leu   Glu Leu Ala Leu Thr   Leu Thr Trp Gly Ser   Val
            2190          2195                       2200

tgg aca gtg agg   cct ctg tcc acg ccc   tgc ctg agg aca cgc   tca        6793
Trp Thr Val Arg   Pro Leu Ser Thr Pro   Cys Leu Arg Thr Arg   Ser
            2205          2210                       2215

ctt tcg agg agg   ctg tgg cca cca act   cgg gcc gct cct cca   gga        6838
Leu Ser Arg Arg   Leu Trp Pro Pro Thr   Arg Ala Ala Pro Pro   Gly
            2220          2225                       2230

ctt cct acg tgt   cct ccc tga cctcccagtc tcaccctctc cgccgcgtgc           6889
Leu Pro Thr Cys   Pro Pro
            2235

ccaacggtta ccactgcacc ctgggactca gctcgggtgg ccgagcacgg cacagctacc        6949

accaccctga ccaagaccac tggtgctagc tgcaccgtga ccgctcagac gcctgcatgc        7009

agcaggcgtg tgttccagtg gatgagtttt atcatccaca cggggcagtc ggccctcggg        7069

ggaggccttg cccaccttgg tgaggctcct gtggcccctc cctccccctc ctcccctctt        7129
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<400> 34

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Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Pro Gly
1               5                   10                  15


Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
            20                  25                  30


Gly Pro Gly Gly Leu Gln Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
        35                  40                  45


Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
    50                  55                  60


Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65                  70                  75                  80


Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                85                  90                  95


Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
            100                 105                 110


Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
        115                 120                 125


Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
    130                 135                 140


Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145                 150                 155                 160


Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
                165                 170                 175


Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
            180                 185                 190
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```
Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
        195             200             205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
        210             215             220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225             230             235             240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
            245             250             255

Ser Thr Asp Ala Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
            260             265             270

Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
        275             280             285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
        290             295             300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305             310             315             320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
            325             330             335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
            340             345             350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
        355             360             365

Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
        370             375             380

Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385             390             395             400

Ala Glu Glu Asp Arg Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
            405             410             415
```

```
Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
        420             425             430

Glu Gly Glu Asp Arg Phe Ala Asp Leu Cys Ala Val Gly Ser Pro Phe
        435             440             445

Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
        450             455             460

Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
465             470             475             480

Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
            485             490             495

Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Arg Arg Leu Thr Thr
        500             505             510

Thr Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
        515             520             525

Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
    530             535             540

Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Val Phe Glu
545             550             555             560

Val Val Trp Ala Ala Ile Lys Pro Gly Ser Ser Phe Gly Ile Ser Val
            565             570             575

Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
        580             585             590

Ser Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
        595             600             605

Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
    610             615             620

Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625             630             635             640

Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
```

Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
            660   665   670

Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe Tyr
            675   680   685

Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
    690   695   700

Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
705   710   715   720

Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
            725   730   735

Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
            740   745   750

Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val Trp
            755   760   765

Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys
    770   775   780

Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Phe Ala
785   790   795   800

Thr Thr Arg His Leu Arg Pro Asp Met Lys Thr His Leu Asp Arg Pro
            805   810   815

Leu Val Val Glu Leu Gly Arg Asp Gly Ala Arg Gly Pro Val Gly Gly
            820   825   830

Lys Ala Arg Pro Glu Ala Ala Glu Ala Pro Glu Gly Val Asp Pro Pro
            835   840   845

Arg Arg His His Arg His Arg Asp Lys Asp Lys Thr Pro Ala Ala Gly
    850   855   860

Asp Gln Asp Arg Ala Glu Ala Pro Lys Ala Glu Ser Gly Glu Pro Gly
865   870   875   880

```
Ala Arg Glu Glu Arg Pro Arg Pro His Arg Ser His Ser Lys Glu Ala
            885                 890               895

Ala Gly Pro Pro Glu Ala Arg Ser Glu Arg Gly Arg Gly Pro Gly Pro
            900                 905               910

Glu Gly Gly Arg Arg His His Arg Arg Gly Ser Pro Glu Glu Ala Ala
            915                 920               925

Glu Arg Glu Pro Arg Arg His Arg Ala His Arg His Gln Asp Pro Ser
    930                 935               940

Lys Glu Cys Ala Gly Ala Lys Gly Glu Arg Arg Ala Arg His Arg Gly
945                 950               955               960

Gly Pro Arg Ala Gly Pro Arg Glu Ala Glu Ser Gly Glu Glu Pro Ala
            965                 970               975

Arg Arg His Arg Ala Arg His Lys Ala Gln Pro Ala His Glu Ala Val
            980                 985               990

Glu Lys Glu Thr Thr Glu Lys Glu  Ala Thr Glu Lys Glu  Ala Glu Ile
    995                 1000              1005

Val Glu  Ala Asp Lys Glu Lys  Glu Leu Arg Asn His  Gln Pro Arg
    1010              1015               1020

Glu Pro  His Cys Asp Leu Glu  Thr Ser Gly Thr Val  Thr Val Gly
    1025              1030               1035

Pro Met  His Thr Leu Pro Ser  Thr Cys Leu Gln Lys  Val Glu Glu
    1040              1045               1050

Gln Pro  Glu Asp Ala Asp Asn  Gln Arg Asn Val Thr  Arg Met Gly
    1055              1060               1065

Ser Gln  Pro Pro Asp Pro Asn  Thr Ile Val His Ile  Pro Val Met
    1070              1075               1080

Leu Thr  Gly Pro Leu Gly Glu  Ala Thr Val Val Pro  Ser Gly Asn
    1085              1090               1095
```

```
Val Asp  Leu Glu Ser Gln Ala  Glu Gly Lys Lys Glu  Val Glu Ala
    1100              1105              1110

Asp Asp  Val Met Arg Ser Gly  Pro Arg Pro Ile Val  Pro Tyr Ser
    1115              1120              1125

Ser Met  Phe Cys Leu Ser Pro  Thr Asn Leu Leu Arg  Arg Phe Cys
    1130              1135              1140

His Tyr  Ile Val Thr Met Arg  Tyr Phe Glu Val Val  Ile Leu Val
    1145              1150              1155

Val Ile  Ala Leu Ser Ser Ile  Ala Leu Ala Ala Glu  Asp Pro Val
    1160              1165              1170

Arg Thr  Asp Ser Pro Arg Asn  Asn Ala Leu Lys Tyr  Leu Asp Tyr
    1175              1180              1185

Ile Phe  Thr Gly Val Phe Thr  Phe Glu Met Val Ile  Lys Met Ile
    1190              1195              1200

Asp Leu  Gly Leu Leu Leu His  Pro Gly Ala Tyr Phe  Arg Asp Leu
    1205              1210              1215

Trp Asn  Ile Leu Asp Phe Ile  Val Val Ser Gly Ala  Leu Val Ala
    1220              1225              1230

Phe Ala  Phe Ser Gly Ser Lys  Gly Lys Asp Ile Asn  Thr Ile Lys
    1235              1240              1245

Ser Leu  Arg Val Leu Arg Val  Leu Arg Pro Leu Lys  Thr Ile Lys
    1250              1255              1260

Arg Leu  Pro Lys Leu Lys Ala  Val Phe Asp Cys Val  Val Asn Ser
    1265              1270              1275

Leu Lys  Asn Val Leu Asn Ile  Leu Ile Val Tyr Met  Leu Phe Met
    1280              1285              1290

Phe Ile  Phe Ala Val Ile Ala  Val Gln Leu Phe Lys  Gly Lys Phe
    1295              1300              1305
```

```
Phe Tyr Cys Thr Asp Glu Ser  Lys Glu Leu Glu Arg  Asp Cys Arg
    1310             1315             1320

Gly Gln Tyr Leu Asp Tyr Glu  Lys Glu Glu Val Glu  Ala Gln Pro
    1325             1330             1335

Arg Gln Trp Lys Lys Tyr Asp  Phe His Tyr Asp Asn  Val Leu Trp
    1340             1345             1350

Ala Leu Leu Thr Leu Phe Thr  Val Ser Thr Gly Glu  Gly Trp Pro
    1355             1360             1365

Met Val Leu Lys His Ser Val  Asp Ala Thr Tyr Glu  Glu Gln Gly
    1370             1375             1380

Pro Ser Pro Gly Tyr Arg Met  Glu Leu Ser Ile Phe  Tyr Val Val
    1385             1390             1395

Tyr Phe Val Val Phe Pro Phe  Phe Phe Val Asn Ile  Phe Val Ala
    1400             1405             1410

Leu Ile Ile Ile Thr Phe Gln  Glu Gln Gly Asp Lys  Val Met Ser
    1415             1420             1425

Glu Cys Ser Leu Glu Lys Asn  Glu Arg Ala Cys Ile  Asp Phe Ala
    1430             1435             1440

Ile Ser Ala Lys Pro Leu Thr  Arg Tyr Met Pro Gln  Asn Arg Gln
    1445             1450             1455

Ser Phe Gln Tyr Lys Thr Trp  Thr Phe Val Val Ser  Pro Pro Phe
    1460             1465             1470

Glu Tyr Phe Ile Met Ala Met  Ile Ala Leu Asn Thr  Val Val Leu
    1475             1480             1485

Met Met Lys Phe Tyr Asp Ala  Pro Tyr Glu Tyr Glu  Leu Met Leu
    1490             1495             1500

Lys Cys Leu Asn Ile Val Phe  Thr Ser Met Phe Ser  Met Glu Cys
    1505             1510             1515

Val Leu Lys Ile Ile Ala Phe  Gly Val Leu Asn Tyr  Phe Arg Asp
```

Ala Trp Asn Val Phe Asp Phe Val Thr Val Leu Gly Ser Ile Thr
    1535   1540   1545

Asp Ile Leu Val Thr Glu Ile Ala Glu Thr Asn Asn Phe Ile Asn
    1550   1555   1560

Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu Ile Lys Leu
    1565   1570   1575

Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp Thr Phe Val
    1580   1585   1590

Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu Ile Ala Met
    1595   1600   1605

Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val Phe Gly Asn
    1610   1615   1620

Ile Ala Leu Asp Asp Asp Thr Ser Ile Asn Arg His Asn Asn Phe
    1625   1630   1635

Arg Thr Phe Leu Gln Ala Leu Met Leu Leu Phe Arg Ser Ala Thr
    1640   1645   1650

Gly Glu Ala Trp His Glu Ile Met Leu Ser Cys Leu Ser Asn Gln
    1655   1660   1665

Ala Cys Asp Glu Gln Ala Asn Ala Thr Glu Cys Gly Ser Asp Phe
    1670   1675   1680

Ala Tyr Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys Ser Phe Leu
    1685   1690   1695

Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu Tyr
    1700   1705   1710

Leu Thr Arg Asp Ser Ser Ile Leu Gly Pro His His Leu Asp Glu
    1715   1720   1725

Phe Ile Arg Val Trp Ala Glu Tyr Asp Pro Ala Ala Cys Gly Arg
    1730   1735   1740

```
Ile Ser  Tyr Asn Asp Met Phe  Glu Met Leu Lys His  Met Ser Pro
    1745                 1750                 1755


Pro Leu  Gly Leu Gly Lys Lys  Cys Pro Ala Arg Val  Ala Tyr Lys
    1760                 1765                 1770


Arg Leu  Val Arg Met Asn Met  Pro Ile Ser Asn Glu  Asp Met Thr
    1775                 1780                 1785


Val His  Phe Thr Ser Thr Leu  Met Ala Leu Ile Arg  Thr Ala Leu
    1790                 1795                 1800


Glu Ile  Lys Leu Ala Pro Ala  Gly Thr Lys Gln His  Gln Cys Asp
    1805                 1810                 1815


Ala Glu  Leu Arg Lys Glu Ile  Ser Val Val Trp Ala  Asn Leu Pro
    1820                 1825                 1830


Gln Lys  Thr Leu Asp Leu Leu  Val Pro Pro His Lys  Pro Asp Glu
    1835                 1840                 1845


Met Thr  Val Gly Lys Val Tyr  Ala Ala Leu Met Ile  Phe Asp Phe
    1850                 1855                 1860


Tyr Lys  Gln Asn Lys Thr Thr  Arg Asp Gln Met Gln  Gln Ala Pro
    1865                 1870                 1875


Gly Gly  Leu Ser Gln Met Gly  Pro Val Ser Leu Phe  His Pro Leu
    1880                 1885                 1890


Lys Ala  Thr Leu Glu Gln Thr  Gln Pro Ala Val Leu  Arg Gly Ala
    1895                 1900                 1905


Arg Val  Phe Leu Arg Gln Lys  Ser Ser Thr Ser Leu  Ser Asn Gly
    1910                 1915                 1920


Gly Ala  Ile Gln Asn Gln Glu  Ser Gly Ile Lys Glu  Ser Val Ser
    1925                 1930                 1935


Trp Gly  Thr Gln Arg Thr Gln  Asp Ala Pro His Glu  Ala Arg Pro
    1940                 1945                 1950
```

```
Pro Leu  Glu Arg Gly His Ser  Thr Glu Ile Pro Val  Gly Arg Ser
    1955                1960                1965

Gly Ala  Leu Ala Val Asp Val  Gln Met Gln Ser Ile  Thr Arg Arg
    1970                1975                1980

Gly Pro  Asp Gly Glu Pro Gln  Pro Gly Leu Glu Ser  Gln Gly Arg
    1985                1990                1995

Ala Ala  Ser Met Pro Arg Leu  Ala Ala Glu Thr Gln  Pro Val Thr
    2000                2005                2010

Asp Ala  Ser Pro Met Lys Arg  Ser Ile Ser Thr Leu  Ala Gln Arg
    2015                2020                2025

Pro Arg  Gly Thr His Leu Cys  Ser Thr Thr Pro Asp  Arg Pro Pro
    2030                2035                2040

Pro Ser  Gln Ala Ser Ser His  His His His His Arg  Cys His Arg
    2045                2050                2055

Arg Arg  Asp Arg Lys Gln Arg  Ser Leu Glu Lys Gly  Pro Ser Leu
    2060                2065                2070

Ser Ala  Asp Met Asp Gly Ala  Pro Ser Ser Ala Val  Gly Pro Gly
    2075                2080                2085

Leu Pro  Pro Gly Glu Gly Pro  Thr Gly Cys Arg Arg  Glu Arg Glu
    2090                2095                2100

Arg Arg  Gln Glu Arg Gly Arg  Ser Gln Glu Arg Arg  Gln Pro Ser
    2105                2110                2115

Ser Ser  Ser Ser Glu Lys Gln  Arg Phe Tyr Ser Cys  Asp Arg Phe
    2120                2125                2130

Gly Gly  Arg Glu Pro Pro Lys  Pro Lys Pro Ser Leu  Ser Ser His
    2135                2140                2145

Pro Thr  Ser Pro Thr Ala Gly  Gln Glu Pro Gly Pro  His Pro Gln
    2150                2155                2160
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```
Ala Gly  Ser Ala Val Gly Phe  Pro Asn Thr Thr Pro  Cys Cys Arg
    2165             2170             2175

Glu Thr  Pro Ser Ala Ser Pro  Trp Pro Leu Ala Leu  Glu Leu Ala
    2180             2185             2190

Leu Thr  Leu Thr Trp Gly Ser  Val Trp Thr Val Arg  Pro Leu Ser
    2195             2200             2205

Thr Pro  Cys Leu Arg Thr Arg  Ser Leu Ser Arg Arg  Leu Trp Pro
    2210             2215             2220

Pro Thr  Arg Ala Ala Pro Pro  Gly Leu Pro Thr Cys  Pro Pro
    2225             2230             2235


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Tyr Asp Pro Ala Ala Cys
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gcccggactg cataaagtga taagggtctt ttgagacctt gagttcagtt ccttgggagg   287

taccaggagt catggaaggt tttcaagggg cttgtgagac tcaggtcttc tgctgaaatt   347

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caaaggcaga tcaacaaagg cctgtgagag gatgacaaca ttccccaatc tttatgagct   1967

acgcccgggc cttccacagt cagccgccgg caagagcaga ggcaggaaga acgggaagtg   2027

gacttgggcc agatggcagc ttggttacca tgcacagtgg taccatacca aagccagagt   2087
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acctgtgaca tttcctttcc ag t tgc cgg att cat tat aag gat atg tac       4537
                          Cys Arg Ile His Tyr Lys Asp Met Tyr
                                         10              15

agt ttg ttg cgt tgt att gcg cca ccc gtt ggc tta ggg aag aac tgc     4585
Ser Leu Leu Arg Cys Ile Ala Pro Pro Val Gly Leu Gly Lys Asn Cys
             20                  25                  30

cct cgt agg ttg gcc tac aag gtttgcaact tcagagcctc catccaacat        4636
Pro Arg Arg Leu Ala Tyr Lys
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cacctttta gcctctagcc tcacttggaa gcaaatctga ccgtgaggaa agctgatgtc       5656

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cagaaattat caacccaaag ccgccccgat gcagcccttc ctcacccctc catgttcatt      5836

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cacccactg tgccctggcc tcgctgggac gggtttccag tgg gcg cat cag tta         6131
                                             Trp Ala His Gln Leu
                                                              40

caa tga cat gtt tga gat gct gaa aca cat gtc ccc gcc tct ggg            6176
Gln     His Val     Asp Ala Glu Thr His Val Pro Ala Ser Gly
        45                      50              55


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<213>   Homo sapiens

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Leu Leu Arg Cys Ile Ala Pro Pro Val Gly Leu Gly Lys Asn Cys Pro
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Arg Arg Leu Ala Tyr Lys
            35


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Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Thr Gly
1               5                   10                  15

ggc ggg gag cgg gct cgg ggc ggc ggg gcc ggc ggg gcg ggt ggc ccg    ·   96
Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
                20                  25                  30

ggc cag ggg ggt ctg ccg ccg ggc cag cgg gtc ctg tac aag cag tcc       144
Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
            35                  40                  45

att gcg cag cgc gca cgg act atg gcc ctg tac aac ccc atc cca gtc       192
Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
    50                  55                  60

aag cag aac tgc ttc acc gtc aac cgc tcg ctc ttc gtc ttc agc gag       240
Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65                  70                  75                  80

gac aac gtc gtc cgc aaa tac gct aag cgc atc acc gaa tgg ccg ccc       288
Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                85                  90                  95

ttc gaa tac atg atc ctg gcc acc atc atc gcc aac tgt att gtt ctg       336
Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
                100                 105                 110

gcc ctg gag cag cac ctc cct gat ggg gac aag act ccc atg tct gag       384
Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
            115                 120                 125

cga cta gat gac acg gag cct tac ttc atc ggg atc ttt tgc ttc gag       432
Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
        130                 135                 140

gcg ggc atc aag atc ata gcc ctg ggc ttt gtt ttc cac aag ggc tcc       480
Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145                 150                 155                 160

tac ctt cgg aac ggc tgg aat gtc atg gac ttc gtg gtg gtc ctc acg       528
Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
                165                 170                 175

ggg att ctc gcc aca gct gga act gac ttt gac ctg cgc aca ctg agg       576
Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
            180                 185                 190

gct gtg cgt gtg ctt agg ccc ctg aag ctg gtg tct gga att cca agc       624
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Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
        195                 200                 205

ttg cag gtg gtg ctt aag tcc atc atg aag gcc atg gtc ccg ctg ctg      672
Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
        210                 215                 220

cag att ggg ctg ctg ctc ttc ttt gcc atc ctc atg ttt gcc atc atc      720
Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225                 230                 235                 240

ggc ctc gaa ttc tat atg ggc aaa ttc cat aag gcc tgt ttc ccc aac      768
Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
                    245                 250                 255

agc aca gat aca gag cct gtg ggt gac ttt ccc tgt ggc aaa gat ccc      816
Ser Thr Asp Thr Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Asp Pro
                260                 265                 270

cct gct cgt cag tgt gat ggt gac acc gaa tgc cgg gag tac tgg cca      864
Pro Ala Arg Gln Cys Asp Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
            275                 280                 285

gga ccc aac ttt ggc atc acc aat ttt gac aac atc ctg ttt gcc atc      912
Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
        290                 295                 300

ttg aca gtg ttc cag tgt atc acc atg gag ggc tgg act gac atc ctc      960
Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305                 310                 315                 320

tac aat aca aat gat gcg gct ggc aac aca tgg aac tgg ttg tac ttc      1008
Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
                325                 330                 335

atc ccc ctc atc atc att ggc tcc ttc ttc atg ctc aac ctg gtg ctg      1056
Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
            340                 345                 350

ggt gtg ctt tcc gga gag ttt gcc aag gag cgg gag cga gtc gag aac      1104
Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
            355                 360                 365

cgc cgc gcc ttc ctg aag ctc cgc agg cag cag cag att gag cga gag      1152
Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
        370                 375                 380

ctg aat ggg tac ttg gag tgg atc ttc aag gca gag gaa gtc atg ttg      1200
Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385                 390                 395                 400

gca gag gag gac aag aat gca gaa gag aaa tcc cct ttg gat gtg ttg      1248
Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
                405                 410                 415

aag aga gct gcc acc aag aag agc cga aat gac ctc atc cat gca gaa      1296
Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
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                  420                      425                      430
gag ggg gag gac cgg ttt gta gac ctc tgt gca gtt ggg tct cca ttt         1344
Glu Gly Glu Asp Arg Phe Val Asp Leu Cys Ala Val Gly Ser Pro Phe
        435                      440                      445

gct cgt gcc agc ctc aag agt ggg aag acg gag agc tca tcg tac ttc         1392
Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
        450                      455                      460

cgg aga aag gag aag atg ttc cgg ttc ttt atc cgg cgt atg gtg aaa         1440
Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
465                      470                      475                      480

gca cag agc ttc tac tgg gtg gta ctg tgt gtg gtg gcc ctg aac aca         1488
Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
                485                      490                      495

ctg tgt gtg gcc atg gtg cac tat aat cag cct cag cgg ctt acc act         1536
Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr Thr
                500                      505              .        510

gca ctg tac ttt gca gag ttt gtt ttc ctg ggt ctc ttc ctc aca gag         1584
Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
                515                      520                      525

atg tcc ctg aag atg tat ggc cta ggg ccc aga agt tac ttc agg tct         1632
Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
        530                      535                      540

tcc ttc aac tgc ttt gac ttt ggg gtg att gtg ggg agt atc ttt gaa         1680
Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe Glu
545                      550                      555                      560

gta gtc tgg gct gcc atc aag cca gga acc tcc ttt gga atc agt gtg         1728
Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser Val
                565                      570                      575

ctg cgg gct ctg cga ctg ctg agg ata ttc aaa gtt acc aag tat tgg         1776
Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
                580                      585                      590

aac tct ctg agg aac ctg gtg gtt tcc ctc ctc aat tcc atg aag tcc         1824
Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
                595                      600                      605

atc atc agc ctt ctc ttc ctg ctt ttc ctc ttc atc gtg gtc ttc gct         1872
Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
        610                      615                      620

ctg ttg ggg atg cag ctg ttt ggg gga cag ttc aac ttt caa gat gag         1920
Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625                      630                      635                      640

act cca acc acc aat ttt gat acc ttc cca gct gcc atc ctc act gtc         1968
Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
                645                      650                      655
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ttt cag atc ctg aca gga gag gat tgg aat gcc gta atg tat cat ggg        2016
Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
        660                 665                 670

att gag tcg caa ggt gga gtc agc aaa ggc atg ttt tct tcc ttt tac        2064
Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe Tyr
        675                 680                 685

ttc atc gtc ctg aca ctg ttt gga aac tac acc ctg ctg aat gtt ttt        2112
Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
        690                 695                 700

ctg gcc att gct gtg gac aac ctt gcc aat gcc cag gag ttg acc aag        2160
Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
705                 710                 715                 720

gat gaa gag gag atg gaa gaa gca gcc aat cag aaa ctt gct ctt cag        2208
Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
                    725                 730                 735

aag gcc aaa gaa gta gct gaa gtc agc ccc atg tct gct gcc aat atc        2256
Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
                740                 745                 750

tcc atc gct gcc agg cag cag aac tcg gcc aag gcg cgc tca gta tgg        2304
Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val Trp
            755                 760                 765

gag cag cgg gcc agt cag cta agg ctc cag aat ctg cgt gcc agc tgt        2352
Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys
        770                 775                 780

gag gca ttg tac agt gag atg gac cct gag gag cgc ctg cgt tat gcc        2400
Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr Ala
785                 790                 795                 800

agc acg cgc cat gtg agg cca gac atg aag aca cac atg gac cga ccc        2448
Ser Thr Arg His Val Arg Pro Asp Met Lys Thr His Met Asp Arg Pro
                805                 810                 815

cta gtg gtg gag cct ggt cga gat ggc ttg cgg gga ccc gtt ggg agc        2496
Leu Val Val Glu Pro Gly Arg Asp Gly Leu Arg Gly Pro Val Gly Ser
                820                 825                 830

aag tca aag cct gaa ggc acg gag gcc aca gaa agc gcg gac cta cct        2544
Lys Ser Lys Pro Glu Gly Thr Glu Ala Thr Glu Ser Ala Asp Leu Pro
            835                 840                 845

cgc cgg cac cac cgg cat cgt gat agg gac aag acc tca gcc aca gca        2592
Arg Arg His His Arg His Arg Asp Arg Asp Lys Thr Ser Ala Thr Ala
        850                 855                 860

cct gct gga ggc gaa cag gac agg aca gaa agc acc gag acc ggg gcc        2640
Pro Ala Gly Gly Glu Gln Asp Arg Thr Glu Ser Thr Glu Thr Gly Ala
865                 870                 875                 880
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cgg gag gaa cgt gcg cgc cct cgt cga agt cac agc aag gag act cca        2688
Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser His Ser Lys Glu Thr Pro
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ggg gct gac acg caa gtg cgc tgt gag cgc agt agg cgt cac cac cgg        2736
Gly Ala Asp Thr Gln Val Arg Cys Glu Arg Ser Arg Arg His His Arg
            900                     905                 910

cgc ggc tcc ccg gag gag gcc act gaa cgg gag cct cgg cgc cac cgt        2784
Arg Gly Ser Pro Glu Glu Ala Thr Glu Arg Glu Pro Arg Arg His Arg
        915                     920                 925

gcc cac cgg cat gca cag gac tca agc aag gag ggc acg gcg ccg gtg        2832
Ala His Arg His Ala Gln Asp Ser Ser Lys Glu Gly Thr Ala Pro Val
        930                     935                 940

ctt gta ccc aag ggt gag cga cga gca aga cac cga ggc cca cgc acg        2880
Leu Val Pro Lys Gly Glu Arg Arg Ala Arg His Arg Gly Pro Arg Thr
945                     950                 955                 960

ggt cca cgt gag gca gag aac aac gag gag ccc aca cgc agg cac cgt        2928
Gly Pro Arg Glu Ala Glu Asn Asn Glu Glu Pro Thr Arg Arg His Arg
                965                     970                 975

gca agg cat aag gtg cca ccc aca ctg cag ccc cca gag agg gag gct        2976
Ala Arg His Lys Val Pro Pro Thr Leu Gln Pro Pro Glu Arg Glu Ala
                980                     985                 990

gca gag aag gag agc aac gcg gtg  gaa ggg gat aag gaa  acc cga aat      3024
Ala Glu Lys Glu Ser Asn Ala Val  Glu Gly Asp Lys Glu  Thr Arg Asn
        995                 1000             1005

cac cag  ccc aag gaa cct cac  tgt gac ctg gag gcc  att gca gtt         3069
His Gln  Pro Lys Glu Pro His  Cys Asp Leu Glu Ala  Ile Ala Val
    1010                 1015              · 1020

aca ggt  gtg ggc cct ctg cac  atg ctg ccc agc acc  tgt ctc cag         3114
Thr Gly  Val Gly Pro Leu His  Met Leu Pro Ser Thr  Cys Leu Gln
    1025                 1030                 1035

aaa gtg  gac gag caa cca gag  gat gca gac aac cag  cgt aat gtc         3159
Lys Val  Asp Glu Gln Pro Glu  Asp Ala Asp Asn Gln  Arg Asn Val
    1040                 1045                 1050

acc cgg  atg ggc agt cag ccc  tca gat ccc agc acc  act gtg cat         3204
Thr Arg  Met Gly Ser Gln Pro  Ser Asp Pro Ser Thr  Thr Val His
    1055                 1060                 1065

gtc cca  gtg aca ctg aca ggc  cct cct ggg gag acc  cct gta gtt         3249
Val Pro  Val Thr Leu Thr Gly  Pro Pro Gly Glu Thr  Pro Val Val
    1070                 1075                 1080

ccc agt  ggt aac atg aac ctg  gaa ggc caa gca gag  ggc aag aag         3294
Pro Ser  Gly Asn Met Asn Leu  Glu Gly Gln Ala Glu  Gly Lys Lys
    1085                 1090                 1095

gag gca  gag gcg gat gat gtg  ctg aga aga ggc ccc  agg ccc atc         3339
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Glu Ala  Glu Ala Asp Asp Val  Leu Arg Arg Gly Pro  Arg Pro Ile
    1100              1105              1110

gtt ccc  tac agc tcc atg ttt  tgt ctc agc ccc acc  aac ctg ctt       3384
Val Pro  Tyr Ser Ser Met Phe  Cys Leu Ser Pro Thr  Asn Leu Leu
    1115              1120              1125

cgt cgc  ttc tgc cat tac att  gtg acc atg cgg tac  ttt gag atg       3429
Arg Arg  Phe Cys His Tyr Ile  Val Thr Met Arg Tyr  Phe Glu Met
    1130              1135              1140

gta att  ctt gtg gtc att gcc  ttg agc agc att gcc  ctg gct gca       3474
Val Ile  Leu Val Val Ile Ala  Leu Ser Ser Ile Ala  Leu Ala Ala
    1145              1150              1155

gag gat  cct gtg cgg aca gat  tca ttc agg aac aac  gct tta aag       3519
Glu Asp  Pro Val Arg Thr Asp  Ser Phe Arg Asn Asn  Ala Leu Lys
    1160              1165              1170

tac atg  gat tac atc ttt aca  gga gtc ttc acc ttt  gaa atg gtc       3564
Tyr Met  Asp Tyr Ile Phe Thr  Gly Val Phe Thr Phe  Glu Met Val
    1175              1180              1185

ata aag  atg ata gac ttg ggc  ttg ctg ctg cac cct  ggt gcc tac       3609
Ile Lys  Met Ile Asp Leu Gly  Leu Leu Leu His Pro  Gly Ala Tyr
    1190              1195              1200

ttc cgg  gac ctg tgg aac att  ctg gac ttc atc gtt  gtc agt gga       3654
Phe Arg  Asp Leu Trp Asn Ile  Leu Asp Phe Ile Val  Val Ser Gly
    1205              1210              1215

gcc ctg  gtg gca ttt gcg ttc  tcg agc ttc atg gga  gga tcc aaa       3699
Ala Leu  Val Ala Phe Ala Phe  Ser Ser Phe Met Gly  Gly Ser Lys
    1220              1225              1230

ggg aaa  gac atc aat acc atc  aag tct ctg aga gtc  ctg cgt gtc       3744
Gly Lys  Asp Ile Asn Thr Ile  Lys Ser Leu Arg Val  Leu Arg Val
    1235              1240              1245

ctg agg  ccc ctc aag acc atc  aag cgg ctg cct aag  ctc aag gct       3789
Leu Arg  Pro Leu Lys Thr Ile  Lys Arg Leu Pro Lys  Leu Lys Ala
    1250              1255              1260

gtc ttt  gac tgt gtg gtg aac  tcc ctg aag aac gtc  ttg aac atc       3834
Val Phe  Asp Cys Val Val Asn  Ser Leu Lys Asn Val  Leu Asn Ile
    1265              1270              1275

ctg att  gtc tac atg ctc ttc  atg ttc ata ttt gcc  gtc att gcc       3879
Leu Ile  Val Tyr Met Leu Phe  Met Phe Ile Phe Ala  Val Ile Ala
    1280              1285              1290

gtc cag  ctc ttc aaa ggg aag  ttc ttt tac tgt act  gat gaa tcc       3924
Val Gln  Leu Phe Lys Gly Lys  Phe Phe Tyr Cys Thr  Asp Glu Ser
    1295              1300              1305

aag gag  ctg gag agg gac tgc  cgg ggt cag tat ttg  gat tat gag       3969
Lys Glu  Leu Glu Arg Asp Cys  Arg Gly Gln Tyr Leu  Asp Tyr Glu
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      1310                    1315                       1320

aag gaa  gaa gta gaa gcc cag  cca agg cag tgg aag  aaa tat gac      4014
Lys Glu  Glu Val Glu Ala Gln  Pro Arg Gln Trp Lys  Lys Tyr Asp
     1325                1330                1335

ttc cac  tat gac aat gtt ctc  tgg gcc ttg ttg acg  ctg ttc aca      4059
Phe His  Tyr Asp Asn Val Leu  Trp Ala Leu Leu Thr  Leu Phe Thr
     1340                1345                1350

gtg tcc  acg gga gag ggg tgg  ccc atg gtg ctg aaa  cac tct gtg      4104
Val Ser  Thr Gly Glu Gly Trp  Pro Met Val Leu Lys  His Ser Val
     1355                1360                1365

gat gcc  acc tat gag gaa cag  ggg ccc agt ccc ggg  ttc cgg atg      4149
Asp Ala  Thr Tyr Glu Glu Gln  Gly Pro Ser Pro Gly  Phe Arg Met
     1370                1375                1380

gag ctc  tcc atc ttc tac gtg  gtc tac ttt gtg gtc  ttc cct ttt      4194
Glu Leu  Ser Ile Phe Tyr Val  Val Tyr Phe Val Val  Phe Pro Phe
     1385                1390                1395

ttc ttt  gtc aac atc ttt gtg  gcc ttg atc att atc  acc ttc cag      4239
Phe Phe  Val Asn Ile Phe Val  Ala Leu Ile Ile Ile  Thr Phe Gln
     1400                1405                1410

gaa cag  gga gat aag gtg atg  tct gaa tgc agc tta  gaa aag aat      4284
Glu Gln  Gly Asp Lys Val Met  Ser Glu Cys Ser Leu  Glu Lys Asn
     1415                1420                1425

gag agg  gct tgc att gat ttt  gcc atc agt gcc aag  ccc ctg aca      4329
Glu Arg  Ala Cys Ile Asp Phe  Ala Ile Ser Ala Lys  Pro Leu Thr
     1430                1435                1440

cgg tac  atg cct caa aac aaa  cag tcg ttc cag tat  aag aca tgg      4374
Arg Tyr  Met Pro Gln Asn Lys  Gln Ser Phe Gln Tyr  Lys Thr Trp
     1445                1450                1455

aca ttc  gtg gtc tct cca ccc  ttt gag tac ttc atc  atg gct atg      4419
Thr Phe  Val Val Ser Pro Pro  Phe Glu Tyr Phe Ile  Met Ala Met
     1460                1465                1470

ata gcc  ctc aac aca gtg gtg  ctg atg atg aag ttc  tat gat gca      4464
Ile Ala  Leu Asn Thr Val Val  Leu Met Met Lys Phe  Tyr Asp Ala
     1475                1480                1485

cct tat  gag tac gag ctg atg  ctg aaa tgc ctg aac  att gtc ttc      4509
Pro Tyr  Glu Tyr Glu Leu Met  Leu Lys Cys Leu Asn  Ile Val Phe
     1490                1495                1500

aca tcc  atg ttc tcg atg gag  tgc ata ctg aag atc  atc gcc ttt      4554
Thr Ser  Met Phe Ser Met Glu  Cys Ile Leu Lys Ile  Ile Ala Phe
     1505                1510                1515

ggg gta  ttg aac tac ttc aga  gat gcc tgg aac gtc  ttt gac ttt      4599
Gly Val  Leu Asn Tyr Phe Arg  Asp Ala Trp Asn Val  Phe Asp Phe
     1520                1525                1530
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gtc acg gtt ttg gga agt att  act gat att tta gta  aca gag ata      4644
Val Thr Val Leu Gly Ser Ile  Thr Asp Ile Leu Val  Thr Glu Ile
    1535             1540               1545

gcg aac aac ttc atc aac cta  agc ttc ctt cgc ctc  ttc cgg gcg      4689
Ala Asn Asn Phe Ile Asn Leu  Ser Phe Leu Arg Leu  Phe Arg Ala
    1550             1555               1560

gca cgg ctg atc aag ctg ctt  cgc cag ggc tac acc  atc cgc atc      4734
Ala Arg Leu Ile Lys Leu Leu  Arg Gln Gly Tyr Thr  Ile Arg Ile
    1565             1570               1575

cta ttg tgg acc ttc gtc cag  tcc ttt aag gcg ctg  ccc tac gtg      4779
Leu Leu Trp Thr Phe Val Gln  Ser Phe Lys Ala Leu  Pro Tyr Val
    1580             1585               1590

tgc ctc ctc att gcc atg ctg  ttc ttc atc tac gcc  atc atc gga      4824
Cys Leu Leu Ile Ala Met Leu  Phe Phe Ile Tyr Ala  Ile Ile Gly
    1595             1600               1605

atg cag gtt ttt gga aac att  gcc ctt gat gat gac  acc agt atc      4869
Met Gln Val Phe Gly Asn Ile  Ala Leu Asp Asp Asp  Thr Ser Ile
    1610             1615               1620

aac cga cac aac aac ttc cgg  aca ttt ctg caa gcc  tta atg cta      4914
Asn Arg His Asn Asn Phe Arg  Thr Phe Leu Gln Ala  Leu Met Leu
    1625             1630               1635

ttg ttc agg agt gcc act ggg  gag gcc tgg cat gag  atc atg ctg      4959
Leu Phe Arg Ser Ala Thr Gly  Glu Ala Trp His Glu  Ile Met Leu
    1640             1645               1650

tct tgt ctg ggc aac cgg gcc  tgt gac cca cat gcc  aac gcc agt      5004
Ser Cys Leu Gly Asn Arg Ala  Cys Asp Pro His Ala  Asn Ala Ser
    1655             1660               1665

gag tgc ggg agc gac ttt gcc  tat ttt tat ttt gtc  tcc ttc atc      5049
Glu Cys Gly Ser Asp Phe Ala  Tyr Phe Tyr Phe Val  Ser Phe Ile
    1670             1675               1680

ttc ctc tgt tcc ttt ctg atg  ttg aac ctc ttt gtt  gct gta atc      5094
Phe Leu Cys Ser Phe Leu Met  Leu Asn Leu Phe Val  Ala Val Ile
    1685             1690               1695

atg gac aat ttt gag tac ctc  act cgg gac tct tcc  atc cta ggg      5139
Met Asp Asn Phe Glu Tyr Leu  Thr Arg Asp Ser Ser  Ile Leu Gly
    1700             1705               1710

cct cac cac tta gac gaa ttc  att cga gtc tgg gct  gaa tac gac      5184
Pro His His Leu Asp Glu Phe  Ile Arg Val Trp Ala  Glu Tyr Asp
    1715             1720               1725

cca gct gcg tgt ggg cgc atc  agt tac aat gac atg  ttt gag atg      5229
Pro Ala Ala Cys Gly Arg Ile  Ser Tyr Asn Asp Met  Phe Glu Met
    1730             1735               1740
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ctg aaa cac atg tcc cca cct ctg ggg ttg ggg aag aaa tgc ccg    5274
Leu Lys His Met Ser Pro Pro Leu Gly Leu Gly Lys Lys Cys Pro
    1745                1750                1755

gct cga gtt gca tac aag cgc ctg gtt cgc atg aac atg ccc ata    5319
Ala Arg Val Ala Tyr Lys Arg Leu Val Arg Met Asn Met Pro Ile
    1760                1765                1770

tcc aat gag gac atg acg gtg cac ttt acg tcc aca ctg atg gcc    5364
Ser Asn Glu Asp Met Thr Val His Phe Thr Ser Thr Leu Met Ala
    1775                1780                1785

ctc atc cgg aca gca ctg gag atc aag ctt gcc cca gcg ggg acg    5409
Leu Ile Arg Thr Ala Leu Glu Ile Lys Leu Ala Pro Ala Gly Thr
    1790                1795                1800

aag cag cac cag tgt gat gct gag ctg aga aaa gag atc tct tct    5454
Lys Gln His Gln Cys Asp Ala Glu Leu Arg Lys Glu Ile Ser Ser
    1805                1810                1815

gtg tgg gct aat ctg ccc cag aag act ctg gac tta ctg gta cca    5499
Val Trp Ala Asn Leu Pro Gln Lys Thr Leu Asp Leu Leu Val Pro
    1820                1825                1830

ccc cac aaa cct gac gag atg aca gtg ggg aag gtc tat gct gct    5544
Pro His Lys Pro Asp Glu Met Thr Val Gly Lys Val Tyr Ala Ala
    1835                1840                1845

ctc atg ata ttt gac ttc tac aaa cag aac aaa acc acc aga gat    5589
Leu Met Ile Phe Asp Phe Tyr Lys Gln Asn Lys Thr Thr Arg Asp
    1850                1855                1860

cag act cac caa gct ccc gga ggc ctg tcc cag atg ggt ccc gtt    5634
Gln Thr His Gln Ala Pro Gly Gly Leu Ser Gln Met Gly Pro Val
    1865                1870                1875

tcc ctg ttc cac cct ctg aag gcc acc ctg gaa cag aca cag ccc    5679
Ser Leu Phe His Pro Leu Lys Ala Thr Leu Glu Gln Thr Gln Pro
    1880                1885                1890

gct gtg ctt cga gga gct cgg gtt ttc ctt cgg caa aag agt gca    5724
Ala Val Leu Arg Gly Ala Arg Val Phe Leu Arg Gln Lys Ser Ala
    1895                1900                1905

act tcc ctc agc aat ggg ggt gcc ata caa acc cag gaa agt ggc    5769
Thr Ser Leu Ser Asn Gly Gly Ala Ile Gln Thr Gln Glu Ser Gly
    1910                1915                1920

atc aag gag tcg ctg tcc tgg ggc acg cag agg acc caa gat gca    5814
Ile Lys Glu Ser Leu Ser Trp Gly Thr Gln Arg Thr Gln Asp Ala
    1925                1930                1935

ctt tat gag gcc aga gca cct cta gaa cgt ggc cat tct gca gag    5859
Leu Tyr Glu Ala Arg Ala Pro Leu Glu Arg Gly His Ser Ala Glu
    1940                1945                1950

atc cct gtg ggg cag tca gga aca ctg gct gtg gat gtc cag atg    5904
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Ile Pro  Val Gly Gln Ser Gly  Thr Leu Ala Val Asp  Val Gln Met
    1955             1960                 1965

cag aac  atg aca ctg aga gga  cca gat ggg gag ccc  cag cct ggg        5949
Gln Asn  Met Thr Leu Arg Gly  Pro Asp Gly Glu Pro  Gln Pro Gly
    1970             1975                 1980

ctg gaa  agc caa ggc aga gct  gcc tct atg cca cgc  cta gcg gca        5994
Leu Glu  Ser Gln Gly Arg Ala  Ala Ser Met Pro Arg  Leu Ala Ala
    1985             1990                 1995

gaa aca  cag ccg gcc cct aat  gcc agc ccc atg aag  cgc tcc atc        6039
Glu Thr  Gln Pro Ala Pro Asn  Ala Ser Pro Met Lys  Arg Ser Ile
    2000             2005                 2010

tcc aca  ctg gct cca cgc cca  cat ggg act cag ctt  tgc agc aca        6084
Ser Thr  Leu Ala Pro Arg Pro  His Gly Thr Gln Leu  Cys Ser Thr
    2015             2020                 2025

gtt ctg  gac cgg cct cct cct  agc cag gca tca cat  cac cac cac        6129
Val Leu  Asp Arg Pro Pro Pro  Ser Gln Ala Ser His  His His His
    2030             2035                 2040

cac cgc  tgc cac cgg cgc aga  gac aag aag caa agg  tcc ctg gaa        6174
His Arg  Cys His Arg Arg Arg  Asp Lys Lys Gln Arg  Ser Leu Glu
    2045             2050                 2055

aag ggg  ccc agc ctg tct gtt  gac cca gaa ggt gca  cca agc act        6219
Lys Gly  Pro Ser Leu Ser Val  Asp Pro Glu Gly Ala  Pro Ser Thr
    2060             2065                 2070

gct gca  gga cct ggt ctg ccc  cat gga gaa gga tcc  acc gcc tgc        6264
Ala Ala  Gly Pro Gly Leu Pro  His Gly Glu Gly Ser  Thr Ala Cys
    2075             2080                 2085

cgg cgg  gac cgt aaa cag gag  cga ggc cgg tcc cag  gag cgg agg        6309
Arg Arg  Asp Arg Lys Gln Glu  Arg Gly Arg Ser Gln  Glu Arg Arg
    2090             2095                 2100

cag ccc  tca tct tcc tct tca  gag aag cag cgc ttc  tat tcc tgt        6354
Gln Pro  Ser Ser Ser Ser Ser  Glu Lys Gln Arg Phe  Tyr Ser Cys
    2105             2110                 2115

gac cgc  ttt ggg agc cgg gag  ccc ccg caa ctg atg  ccc tca ctc        6399
Asp Arg  Phe Gly Ser Arg Glu  Pro Pro Gln Leu Met  Pro Ser Leu
    2120             2125                 2130

agt agc  cac ccc aca tcg cca  aca gcg gcg cta gag  cca gca ccc        6444
Ser Ser  His Pro Thr Ser Pro  Thr Ala Ala Leu Glu  Pro Ala Pro
    2135             2140                 2145

cac cca  cag ggc agt ggt tcc  gtt aat ggg agc ccc  ttg atg tca        6489
His Pro  Gln Gly Ser Gly Ser  Val Asn Gly Ser Pro  Leu Met Ser
    2150             2155                 2160

aca tcc  ggt gct agc acc ccg  ggc cga ggt ggg cgg  agg cag ctc        6534
Thr Ser  Gly Ala Ser Thr Pro  Gly Arg Gly Gly Arg  Arg Gln Leu
```

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      2165                  2170                      2175

ccc cag  act cct ctg acc cca  cgc ccc agc atc acc  tac aag acc       6579
Pro Gln  Thr Pro Leu Thr Pro  Arg Pro Ser Ile Thr  Tyr Lys Thr
     2180                  2185                      2190

gcc aat  tcc tcg cct gtc cac  ttt gct gag ggt cag  agc ggc ctc       6624
Ala Asn  Ser Ser Pro Val His  Phe Ala Glu Gly Gln  Ser Gly Leu
     2195                  2200                      2205

cca gcc  ttc tcc cct ggc cgt  ctc agc cgc ggc ctt  tct gaa cac       6669
Pro Ala  Phe Ser Pro Gly Arg  Leu Ser Arg Gly Leu  Ser Glu His
     2210                  2215                      2220

aat gcc  ctg ctc cag aaa gag  ccc ctg agc cag cct  cta gct cct       6714
Asn Ala  Leu Leu Gln Lys Glu  Pro Leu Ser Gln Pro  Leu Ala Pro
     2225                  2230                      2235

ggc tcc  cga att ggc tct gac  cct tac cta ggg cag  cgt ctg gac       6759
Gly Ser  Arg Ile Gly Ser Asp  Pro Tyr Leu Gly Gln  Arg Leu Asp
     2240                  2245                      2250

agt gag  gcc tcc gcc cac acc  ctg cct gag gat aca  ctc acc ttt       6804
Ser Glu  Ala Ser Ala His Thr  Leu Pro Glu Asp Thr  Leu Thr Phe
     2255                  2260                      2265

gaa gag  gca gtg gcc acc aac  tct ggc cgc tcc tcc  agg act tcc       6849
Glu Glu  Ala Val Ala Thr Asn  Ser Gly Arg Ser Ser  Arg Thr Ser
     2270                  2275                      2280

tat gtg  tcc tcc ctc act tcc  caa tcc cac cct ctc  cgc cgt gta       6894
Tyr Val  Ser Ser Leu Thr Ser  Gln Ser His Pro Leu  Arg Arg Val
     2285                  2290                      2295

ccc aat  ggc tat cac tgc act  ttg gga ctc agc act  ggc gtc cgg       6939
Pro Asn  Gly Tyr His Cys Thr  Leu Gly Leu Ser Thr  Gly Val Arg
     2300                  2305                      2310

gcg cgg  cac agc tac cac cac  ccc gat cag gac cac  tgg tgc tag       6984
Ala Arg  His Ser Tyr His His  Pro Asp Gln Asp His  Trp Cys
     2315                  2320                      2325


<210>   38
<211>   2327
<212>   PRT
<213>   Mus musculus

<400>   38

Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Thr Gly
1               5                   10                  15


Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
                20                  25                  30
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Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
        35   40   45

Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
    50   55   60

Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65   70   75   80

Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                85   90   95

Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
            100   105   110

Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
        115   120   125

Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
    130   135   140

Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145   150   155   160

Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
                165   170   175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
            180   185   190

Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
        195   200   205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
    210   215   220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225   230   235   240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
            245   250   255

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Ser Thr Asp Thr Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Asp Pro
            260             265             270

Pro Ala Arg Gln Cys Asp Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
            275             280             285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
            290             295             300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305             310             315             320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
                325             330             335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
            340             345             350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
            355             360             365

Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
            370             375             380

Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385             390             395             400

Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
                405             410             415

Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
                420             425             430

Glu Gly Glu Asp Arg Phe Val Asp Leu Cys Ala Val Gly Ser Pro Phe
            435             440             445

Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
            450             455             460

Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
465             470             475             480

Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
```

Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr Thr
            500   505   510

Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
            515   520   525

Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
            530   535   540

Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe Glu
545   550   555   560

Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser Val
            565   570   575

Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
            580   585   590

Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
            595   600   605

Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
    610   615   620

Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625   630   635   640

Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
            645   650   655

Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
            660   665   670

Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe Tyr
            675   680   685

Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
    690   695   700

Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
705   710   715   720

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Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
            725             730             735

Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
            740             745             750

Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val Trp
            755             760             765

Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys
    770             775             780

Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr Ala
785             790             795             800

Ser Thr Arg His Val Arg Pro Asp Met Lys Thr His Met Asp Arg Pro
            805             810             815

Leu Val Val Glu Pro Gly Arg Asp Gly Leu Arg Gly Pro Val Gly Ser
            820             825             830

Lys Ser Lys Pro Glu Gly Thr Glu Ala Thr Glu Ser Ala Asp Leu Pro
            835             840             845

Arg Arg His His Arg His Arg Asp Arg Asp Lys Thr Ser Ala Thr Ala
    850             855             860

Pro Ala Gly Gly Glu Gln Asp Arg Thr Glu Ser Thr Glu Thr Gly Ala
865             870             875             880

Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser His Ser Lys Glu Thr Pro
            885             890             895

Gly Ala Asp Thr Gln Val Arg Cys Glu Arg Ser Arg Arg His His Arg
            900             905             910

Arg Gly Ser Pro Glu Glu Ala Thr Glu Arg Glu Pro Arg Arg His Arg
            915             920             925

Ala His Arg His Ala Gln Asp Ser Ser Lys Glu Gly Thr Ala Pro Val
    930             935             940
```

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Leu Val Pro Lys Gly Glu Arg Arg Ala Arg His Arg Gly Pro Arg Thr
945                 950                 955                 960


Gly Pro Arg Glu Ala Glu Asn Asn Glu Glu Pro Thr Arg Arg His Arg
                965                 970                 975


Ala Arg His Lys Val Pro Pro Thr Leu Gln Pro Pro Glu Arg Glu Ala
                980                 985                 990


Ala Glu Lys Glu Ser Asn Ala Val  Glu Gly Asp Lys Glu  Thr Arg Asn
        995                 1000                1005


His Gln  Pro Lys Glu Pro His  Cys Asp Leu Glu Ala  Ile Ala Val
    1010                1015                1020


Thr Gly  Val Gly Pro Leu His  Met Leu Pro Ser Thr  Cys Leu Gln
    1025                1030                1035


Lys Val  Asp Glu Gln Pro Glu  Asp Ala Asp Asn Gln  Arg Asn Val
    1040                1045                1050


Thr Arg  Met Gly Ser Gln Pro  Ser Asp Pro Ser Thr  Thr Val His
    1055                1060                1065


Val Pro  Val Thr Leu Thr Gly  Pro Pro Gly Glu Thr  Pro Val Val
    1070                1075                1080


Pro Ser  Gly Asn Met Asn Leu  Glu Gly Gln Ala Glu  Gly Lys Lys
    1085                1090                1095


Glu Ala  Glu Ala Asp Asp Val  Leu Arg Arg Gly Pro  Arg Pro Ile
    1100                1105                1110


Val Pro  Tyr Ser Ser Met Phe  Cys Leu Ser Pro Thr  Asn Leu Leu
    1115                1120                1125


Arg Arg  Phe Cys His Tyr Ile  Val Thr Met Arg Tyr  Phe Glu Met
    1130                1135                1140


Val Ile  Leu Val Val Ile Ala  Leu Ser Ser Ile Ala  Leu Ala Ala
    1145                1150                1155
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Glu Asp Pro Val Arg Thr Asp Ser Phe Arg Asn Asn Ala Leu Lys
    1160   1165   1170

Tyr Met Asp Tyr Ile Phe Thr Gly Val Phe Thr Phe Glu Met Val
    1175   1180   1185

Ile Lys Met Ile Asp Leu Gly Leu Leu Leu His Pro Gly Ala Tyr
    1190   1195   1200

Phe Arg Asp Leu Trp Asn Ile Leu Asp Phe Ile Val Val Ser Gly
    1205   1210   1215

Ala Leu Val Ala Phe Ala Phe Ser Ser Phe Met Gly Gly Ser Lys
    1220   1225   1230

Gly Lys Asp Ile Asn Thr Ile Lys Ser Leu Arg Val Leu Arg Val
    1235   1240   1245

Leu Arg Pro Leu Lys Thr Ile Lys Arg Leu Pro Lys Leu Lys Ala
    1250   1255   1260

Val Phe Asp Cys Val Val Asn Ser Leu Lys Asn Val Leu Asn Ile
    1265   1270   1275

Leu Ile Val Tyr Met Leu Phe Met Phe Ile Phe Ala Val Ile Ala
    1280   1285   1290

Val Gln Leu Phe Lys Gly Lys Phe Phe Tyr Cys Thr Asp Glu Ser
    1295   1300   1305

Lys Glu Leu Glu Arg Asp Cys Arg Gly Gln Tyr Leu Asp Tyr Glu
    1310   1315   1320

Lys Glu Glu Val Glu Ala Gln Pro Arg Gln Trp Lys Lys Tyr Asp
    1325   1330   1335

Phe His Tyr Asp Asn Val Leu Trp Ala Leu Leu Thr Leu Phe Thr
    1340   1345   1350

Val Ser Thr Gly Glu Gly Trp Pro Met Val Leu Lys His Ser Val
    1355   1360   1365

Asp Ala Thr Tyr Glu Glu Gln Gly Pro Ser Pro Gly Phe Arg Met

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        1370                    1375                    1380


Glu Leu  Ser Ile Phe Tyr Val  Val Tyr Phe Val Val  Phe Pro Phe
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Phe Phe  Val Asn Ile Phe Val  Ala Leu Ile Ile Ile  Thr Phe Gln
    1400                 1405                 1410


Glu Gln  Gly Asp Lys Val Met  Ser Glu Cys Ser Leu  Glu Lys Asn
    1415                 1420                 1425


Glu Arg  Ala Cys Ile Asp Phe  Ala Ile Ser Ala Lys  Pro Leu Thr
    1430                 1435                 1440


Arg Tyr  Met Pro Gln Asn Lys  Gln Ser Phe Gln Tyr  Lys Thr Trp
    1445                 1450                 1455


Thr Phe  Val Val Ser Pro Pro  Phe Glu Tyr Phe Ile  Met Ala Met
    1460                 1465                 1470


Ile Ala  Leu Asn Thr Val Val  Leu Met Met Lys Phe  Tyr Asp Ala
    1475                 1480                 1485


Pro Tyr  Glu Tyr Glu Leu Met  Leu Lys Cys Leu Asn  Ile Val Phe
    1490                 1495                 1500


Thr Ser  Met Phe Ser Met Glu  Cys Ile Leu Lys Ile  Ile Ala Phe
    1505                 1510                 1515


Gly Val  Leu Asn Tyr Phe Arg  Asp Ala Trp Asn Val  Phe Asp Phe
    1520                 1525                 1530


Val Thr  Val Leu Gly Ser Ile  Thr Asp Ile Leu Val  Thr Glu Ile
    1535                 1540                 1545


Ala Asn  Asn Phe Ile Asn Leu  Ser Phe Leu Arg Leu  Phe Arg Ala
    1550                 1555                 1560


Ala Arg  Leu Ile Lys Leu Leu  Arg Gln Gly Tyr Thr  Ile Arg Ile
    1565                 1570                 1575


Leu Leu  Trp Thr Phe Val Gln  Ser Phe Lys Ala Leu  Pro Tyr Val
    1580                 1585                 1590
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Cys Leu Leu Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly
    1595   1600   1605

Met Gln Val Phe Gly Asn Ile Ala Leu Asp Asp Asp Thr Ser Ile
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Asn Arg His Asn Asn Phe Arg Thr Phe Leu Gln Ala Leu Met Leu
    1625   1630   1635

Leu Phe Arg Ser Ala Thr Gly Glu Ala Trp His Glu Ile Met Leu
    1640   1645   1650

Ser Cys Leu Gly Asn Arg Ala Cys Asp Pro His Ala Asn Ala Ser
    1655   1660   1665

Glu Cys Gly Ser Asp Phe Ala Tyr Phe Tyr Phe Val Ser Phe Ile
    1670   1675   1680

Phe Leu Cys Ser Phe Leu Met Leu Asn Leu Phe Val Ala Val Ile
    1685   1690   1695

Met Asp Asn Phe Glu Tyr Leu Thr Arg Asp Ser Ser Ile Leu Gly
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Pro His His Leu Asp Glu Phe Ile Arg Val Trp Ala Glu Tyr Asp
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Pro Ala Ala Cys Gly Arg Ile Ser Tyr Asn Asp Met Phe Glu Met
    1730   1735   1740

Leu Lys His Met Ser Pro Pro Leu Gly Leu Gly Lys Lys Cys Pro
    1745   1750   1755

Ala Arg Val Ala Tyr Lys Arg Leu Val Arg Met Asn Met Pro Ile
    1760   1765   1770

Ser Asn Glu Asp Met Thr Val His Phe Thr Ser Thr Leu Met Ala
    1775   1780   1785

Leu Ile Arg Thr Ala Leu Glu Ile Lys Leu Ala Pro Ala Gly Thr
    1790   1795   1800

Lys Gln His Gln Cys Asp Ala Glu Leu Arg Lys Glu Ile Ser Ser
    1805   1810   1815

Val Trp Ala Asn Leu Pro Gln Lys Thr Leu Asp Leu Leu Val Pro
    1820   1825   1830

Pro His Lys Pro Asp Glu Met Thr Val Gly Lys Val Tyr Ala Ala
    1835   1840   1845

Leu Met Ile Phe Asp Phe Tyr Lys Gln Asn Lys Thr Thr Arg Asp
    1850   1855   1860

Gln Thr His Gln Ala Pro Gly Gly Leu Ser Gln Met Gly Pro Val
    1865   1870   1875

Ser Leu Phe His Pro Leu Lys Ala Thr Leu Glu Gln Thr Gln Pro
    1880   1885   1890

Ala Val Leu Arg Gly Ala Arg Val Phe Leu Arg Gln Lys Ser Ala
    1895   1900   1905

Thr Ser Leu Ser Asn Gly Gly Ala Ile Gln Thr Gln Glu Ser Gly
    1910   1915   1920

Ile Lys Glu Ser Leu Ser Trp Gly Thr Gln Arg Thr Gln Asp Ala
    1925   1930   1935

Leu Tyr Glu Ala Arg Ala Pro Leu Glu Arg Gly His Ser Ala Glu
    1940   1945   1950

Ile Pro Val Gly Gln Ser Gly Thr Leu Ala Val Asp Val Gln Met
    1955   1960   1965

Gln Asn Met Thr Leu Arg Gly Pro Asp Gly Glu Pro Gln Pro Gly
    1970   1975   1980

Leu Glu Ser Gln Gly Arg Ala Ala Ser Met Pro Arg Leu Ala Ala
    1985   1990   1995

Glu Thr Gln Pro Ala Pro Asn Ala Ser Pro Met Lys Arg Ser Ile
    2000   2005   2010

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Ser Thr  Leu Ala Pro Arg Pro  His Gly Thr Gln Leu  Cys Ser Thr
    2015                2020            2025

Val Leu  Asp Arg Pro Pro Pro  Ser Gln Ala Ser His  His His His
    2030                2035            2040

His Arg  Cys His Arg Arg Arg  Asp Lys Lys Gln Arg  Ser Leu Glu
    2045                2050            2055

Lys Gly  Pro Ser Leu Ser Val  Asp Pro Glu Gly Ala  Pro Ser Thr
    2060                2065            2070

Ala Ala  Gly Pro Gly Leu Pro  His Gly Glu Gly Ser  Thr Ala Cys
    2075                2080            2085

Arg Arg  Asp Arg Lys Gln Glu  Arg Gly Arg Ser Gln  Glu Arg Arg
    2090                2095            2100

Gln Pro  Ser Ser Ser Ser Ser  Glu Lys Gln Arg Phe  Tyr Ser Cys
    2105                2110            2115

Asp Arg  Phe Gly Ser Arg Glu  Pro Pro Gln Leu Met  Pro Ser Leu
    2120                2125            2130

Ser Ser  His Pro Thr Ser Pro  Thr Ala Ala Leu Glu  Pro Ala Pro
    2135                2140            2145

His Pro  Gln Gly Ser Gly Ser  Val Asn Gly Ser Pro  Leu Met Ser
    2150                2155            2160

Thr Ser  Gly Ala Ser Thr Pro  Gly Arg Gly Gly Arg  Arg Gln Leu
    2165                2170            2175

Pro Gln  Thr Pro Leu Thr Pro  Arg Pro Ser Ile Thr  Tyr Lys Thr
    2180                2185            2190

Ala Asn  Ser Ser Pro Val His  Phe Ala Glu Gly Gln  Ser Gly Leu
    2195                2200            2205

Pro Ala  Phe Ser Pro Gly Arg  Leu Ser Arg Gly Leu  Ser Glu His
    2210                2215            2220

Asn Ala  Leu Leu Gln Lys Glu  Pro Leu Ser Gln Pro  Leu Ala Pro
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          2225                    2230                       2235


Gly Ser  Arg Ile Gly Ser Asp  Pro Tyr Leu Gly Gln  Arg Leu Asp
    2240                    2245                    2250


Ser Glu  Ala Ser Ala His Thr  Leu Pro Glu Asp Thr  Leu Thr Phe
    2255                    2260                    2265


Glu Glu  Ala Val Ala Thr Asn  Ser Gly Arg Ser Ser  Arg Thr Ser
    2270                    2275                    2280


Tyr Val  Ser Ser Leu Thr Ser  Gln Ser His Pro Leu  Arg Arg Val
    2285                    2290                    2295


Pro Asn  Gly Tyr His Cys Thr  Leu Gly Leu Ser Thr  Gly Val Arg
    2300                    2305                    2310


Ala Arg  His Ser Tyr His His  Pro Asp Gln Asp His  Trp Cys
    2315                    2320                    2325



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atg gtc cgc ttc ggg gac gag cta ggc ggc cgc tat ggg ggc acc ggc     168
Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Thr Gly
1               5                   10                  15

ggc ggg gag cgg gct cgg ggc ggc ggg gcc ggc ggg gcg ggt ggc ccg     216
Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
            20                  25                  30

ggc cag ggg ggt ctg ccg ccg ggc cag cgg gtc ctg tac aag cag tcc     264
Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
        35                  40                  45

att gcg cag cgc gca cgg act atg gcc ctg tac aac ccc atc cca gtc     312
Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
    50                  55                  60
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aag cag aac tgc ttc acc gtc aac cgc tcg ctc ttc gtc ttc agc gag    360
Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65                  70                  75                  80

gac aac gtc gtc cgc aaa tac gct aag cgc atc acc gaa tgg ccg ccc    408
Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                85                  90                  95

ttc gaa tac atg atc ctg gcc acc atc atc gcc aac tgc att gtt ctg    456
Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
            100                 105                 110

gcc ctg gag cag cac ctc cct gat ggg gac aag act ccc atg tct gag    504
Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
            115                 120                 125

cga cta gat gac acg gag cct tac ttc atc ggg atc ttt tgc ttt gag    552
Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
        130                 135                 140

gcg ggc atc aag atc ata gcc ctg ggc ttt gtt ttc cac aag ggc tcc    600
Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145                 150                 155                 160

tac ctt cgg aac ggc tgg aat gtc atg gac ttc gtg gtg gta ctc acg    648
Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
                165                 170                 175

ggg att ctc gcc aca gct gga act gac ttt gac ctg cgc aca ctg agg    696
Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
            180                 185                 190

gct gtg cgt gtg ctt agg ccc ctg aag ctg gtg tct gga att cca agc    744
Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
        195                 200                 205

ttg cag gtg gtg ctt aag tcc atc atg aag gcc atg gtc ccg ctg ctg    792
Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
        210                 215                 220

cag att ggg ctg ctg ctc ttc ttt gcc atc ctc atg ttt ggc atc atc    840
Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Gly Ile Ile
225                 230                 235                 240

ggc ctc gag ttc tat atg ggc aaa ttc cat aag gcc tgt ttc ccc aac    888
Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
                245                 250                 255

agc aca gat aca gag cct gtg ggt gac ttt ccc tgt ggc aaa gat ccc    936
Ser Thr Asp Thr Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Asp Pro
            260                 265                 270

cct gct cgt cag tgt gat ggt gac acc gaa tgc cgg gag tac tgg cca    984
Pro Ala Arg Gln Cys Asp Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
        275                 280                 285
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gga ccc aac ttt ggt atc acc aat ttt gac aac atc ctg ttt gcc atc        1032
Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
    290                 295                 300

ttg aca gtg ttc cag tgt atc acc atg gag ggc tgg act gac atc ctc        1080
Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305                 310                 315                 320

tac aat aca aat gat gcg gct ggc aac acg tgg aac tgg ttg tac ttc        1128
Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
                325                 330                 335

atc ccc ctc atc atc att ggc tcc ttc ttc atg ctc aac ctg gtg ctg        1176
Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
            340                 345                 350

ggt gtg ctt tct gga gag ttt gcc aag gag cgg gag cga gtc gag aac        1224
Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
            355                 360                 365

cgc cga gcc ttc ctg aag ctc cgc agg cag cag cag att gag cga gag        1272
Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
    370                 375                 380

ctg aat ggg tac ttg gag tgg atc ttc aag gca gag gaa gtc atg ttg        1320
Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385                 390                 395                 400

gca gag gag gac aag aat gca gaa gag aaa tcc cct ttg gat gtg ttg        1368
Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
                405                 410                 415

aag aga gct gcc acc aag aag agc cga aat gac ctc atc cat gca gaa        1416
Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
            420                 425                 430

gag ggg gag gac cgg ttt gta gac ctc tgt gca gtt ggg tct cca ttt        1464
Glu Gly Glu Asp Arg Phe Val Asp Leu Cys Ala Val Gly Ser Pro Phe
            435                 440                 445

gct cgt gcc agc ctc aag agt ggg aag acg gag agc tca tcg tac ttc        1512
Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
    450                 455                 460

cgg aga aag gag aag atg ttc cgg ttc ttt atc cgg cgt atg gtg aaa        1560
Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
465                 470                 475                 480

gca cag agc ttc tac tgg gtg gta ctg tgt gtg gtg gcc ctg aac aca        1608
Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
                485                 490                 495

ctg tgt gtg gcc atg gtg cac tat aat cag cct cag cgg ctt acc act        1656
Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr Thr
            500                 505                 510

gca ctg tac ttt gca gag ttt gtt ttc ctg ggt ctc ttc ctc aca gag       1704
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Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
        515                 520                 525

atg tcc ctg aag atg tat ggc cta ggg ccc aga agt tac ttc agg tct      1752
Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
        530                 535                 540

tcc ttc aac tgc ttt gac ttt ggg gtg att gtg ggg agt atc ttt gaa      1800
Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe Glu
545                 550                 555                 560

gta gtc tgg gct gcc atc aag cca gga acc tcc ttt gga atc agt gtg      1848
Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser Val
                565                 570                 575

ctg cgg gct ctg cga ctg ctg agg ata ttc aaa gtt acc aag tat tgg      1896
Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
                580                 585                 590

aac tct ctg agg aac ctg gtg gtt tcc ctc ctc aat tcc atg aag tcc      1944
Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
                595                 600                 605

atc atc agc ctt ctc ttc ctg ctt ttc ctc ttc atc gtg gtc ttc gct      1992
Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
        610                 615                 620

ctg ttg ggg atg cag ctg ttc gga gga cag ttc aac ttt caa gat gag      2040
Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625                 630                 635                 640

act cca acc acc att ttt gat acc ttc cca gct gcc atc ctc act gtc      2088
Thr Pro Thr Thr Ile Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
                645                 650                 655

ttt cag atc ctg aca gga gag gat tgg aat gcc gta atg tat cat ggg      2136
Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
                660                 665                 670

att gag tca caa ggt gga gtc agc aaa ggc atg ttt tct tcc ttt tac      2184
Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe Tyr
        675                 680                 685

ttc atc gtc ctg aca ctg ttt gga aac tac acc ctg ctg aat gtt ttt      2232
Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
        690                 695                 700

ctg gcc att gct gtg gac aac ctt gcc aat gcc cag gag ttg acc aag      2280
Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
705                 710                 715                 720

gat gaa gag gag atg gaa gaa gca gcc aat cag aaa ctt gct ctt cag      2328
Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
                725                 730                 735

aag gcc aaa gaa gta gct gaa gtc agc ccc atg tct gct gcc aat atc      2376
Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
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tcc atc gct gcg cag gag aac tcg gcc aag gcg cgc tca gta tgg gag        2424
Ser Ile Ala Ala Gln Glu Asn Ser Ala Lys Ala Arg Ser Val Trp Glu
        755                      760                      765

cag cgg gcc agt cag cta agg ctc cag aat ctg cgt gcc agc tgt gag        2472
Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys Glu
        770                      775                      780

gca ttg tac agt gag atg gac cct gag gag cgc ctg cgt tat gcc agc        2520
Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr Ala Ser
785                      790                      795                      800

acg cgc cat gtg agg cca gac atg aag aca cac atg gac cga ccc cta        2568
Thr Arg His Val Arg Pro Asp Met Lys Thr His Met Asp Arg Pro Leu
                805                      810                      815

gtg gtg gag cct ggt cga gat ggc ttg cgg gga ccc gtt ggg agc aag        2616
Val Val Glu Pro Gly Arg Asp Gly Leu Arg Gly Pro Val Gly Ser Lys
                820                      825                      830

tca aag cct gaa ggc acg gag gcc aca gaa agc gcg gac cta cct cgc        2664
Ser Lys Pro Glu Gly Thr Glu Ala Thr Glu Ser Ala Asp Leu Pro Arg
        835                      840                      845

cgg cac cac cgg cat cgt gat agg gac aag acc tca gcc aca gca cct        2712
Arg His His Arg His Arg Asp Arg Asp Lys Thr Ser Ala Thr Ala Pro
    850                      855                      860

gct gga ggc gaa cag gac agg aca gaa agc acc gag acc ggg ccc cgg        2760
Ala Gly Gly Glu Gln Asp Arg Thr Glu Ser Thr Glu Thr Gly Pro Arg
865                      870                      875                      880

gag gaa cgt gcg cgc cct cgt cga agt cac agc aag gag act cca ggg        2808
Glu Glu Arg Ala Arg Pro Arg Arg Ser His Ser Lys Glu Thr Pro Gly
                885                      890                      895

gct gac acg caa gtg cgc tgt gag cgc agt agg cgt cac cac cgg cgc        2856
Ala Asp Thr Gln Val Arg Cys Glu Arg Ser Arg Arg His His Arg Arg
                900                      905                      910

ggc tcc ccg gag gag gcc act gaa cgg gag cct cgg cgc cac cgt gcc        2904
Gly Ser Pro Glu Glu Ala Thr Glu Arg Glu Pro Arg Arg His Arg Ala
        915                      920                      925

cac cgg cat gca cag gac tca agc aag gag ggc acg gcg ccg gtg ctt        2952
His Arg His Ala Gln Asp Ser Ser Lys Glu Gly Thr Ala Pro Val Leu
        930                      935                      940

gta ccc aag ggt gag cga cga gca aga cac cga ggc cca cgc acg ggt        3000
Val Pro Lys Gly Glu Arg Arg Ala Arg His Arg Gly Pro Arg Thr Gly
945                      950                      955                      960

cca cgt gag gca gag aac aac gag gag ccc aca cgc agg cac cgt gca        3048
Pro Arg Glu Ala Glu Asn Asn Glu Glu Pro Thr Arg Arg His Arg Ala
                965                      970                      975
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agg cat aag gtg cca ccc aca ctg cag ccc cca gag agg gag gct gca    3096
Arg His Lys Val Pro Pro Thr Leu Gln Pro Pro Glu Arg Glu Ala Ala
        980              985                  990

gag aag gag agc aac gcg gtg gaa  ggg gat aag gaa acc  cga aat cac   3144
Glu Lys Glu Ser Asn Ala Val Glu  Gly Asp Lys Glu Thr  Arg Asn His
        995              1000              1005

cag ccc aag gaa cct cac tgt  gac ctg gag gcc att  gca gtt aca       3189
Gln Pro Lys Glu Pro His Cys  Asp Leu Glu Ala Ile  Ala Val Thr
    1010              1015              1020

ggt gtg ggc cct ctg cac atg  ctg ccc agc acc tgt  ctc cag aaa       3234
Gly Val Gly Pro Leu His Met  Leu Pro Ser Thr Cys  Leu Gln Lys
    1025              1030              1035

gtg gac gag caa cca gag gat  gca gac aac cag cgt  aat gtc acc       3279
Val Asp Glu Gln Pro Glu Asp  Ala Asp Asn Gln Arg  Asn Val Thr
    1040              1045              1050

cgg atg ggc agt cag ccc tca  gat ccc agc acc act  gtg cat gtc       3324
Arg Met Gly Ser Gln Pro Ser  Asp Pro Ser Thr Thr  Val His Val
    1055              1060              1065

cca gtg aca ctg aca ggc cct  cct ggg gag acc cct  gta gtt ccc       3369
Pro Val Thr Leu Thr Gly Pro  Pro Gly Glu Thr Pro  Val Val Pro
    1070              1075              1080

agt ggt aac atg aac ctg gaa  ggc caa gca gag ggc  aag aag gag       3414
Ser Gly Asn Met Asn Leu Glu  Gly Gln Ala Glu Gly  Lys Lys Glu
    1085              1090              1095

gca gag gcg gat gat gtg ctg  aga aga ggc ccc agg  ccc atc gtt       3459
Ala Glu Ala Asp Asp Val Leu  Arg Arg Gly Pro Arg  Pro Ile Val
    1100              1105              1110

ccc tac agc tcc atg ttt tgt  ctc agc ccc acc aac  ctg ttt cgt       3504
Pro Tyr Ser Ser Met Phe Cys  Leu Ser Pro Thr Asn  Leu Phe Arg
    1115              1120              1125

cgc ttc tgc cat tac att gtg  acc atg cgg tac ttg  gag atg gta       3549.
Arg Phe Cys His Tyr Ile Val  Thr Met Arg Tyr Leu  Glu Met Val
    1130              1135              1140

att ctt gtg gtc att gcc ttg  agc agc att gcc ctg  gct gca gag       3594
Ile Leu Val Val Ile Ala Leu  Ser Ser Ile Ala Leu  Ala Ala Glu
    1145              1150              1155

gat cct gtg cgg aca gat tca  ttc agg aac aac gct  tta gag tac       3639
Asp Pro Val Arg Thr Asp Ser  Phe Arg Asn Asn Ala  Leu Glu Tyr
    1160              1165              1170

atg gat tac atc ttt aca gga  gtc ttc acc tgt gaa  atg gtc ata       3684
Met Asp Tyr Ile Phe Thr Gly  Val Phe Thr Cys Glu  Met Val Ile
    1175              1180              1185
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aag atg ata gac ttg ggc ttg  ctg ctg cac cct ggt  gcc tac ttc     3729
Lys Met Ile Asp Leu Gly Leu  Leu Leu His Pro Gly  Ala Tyr Phe
    1190                 1195                 1200

cgg gac ctg tgg aac att ctg  gac ttc atc gtt gtc  agt gga gcc     3774
Arg Asp Leu Trp Asn Ile Leu  Asp Phe Ile Val Val  Ser Gly Ala
    1205                 1210                 1215

ctg gtg gca ttt gcg ttc tca  gga tcc aaa ggg aaa  gac atc aat     3819
Leu Val Ala Phe Ala Phe Ser  Gly Ser Lys Gly Lys  Asp Ile Asn
    1220                 1225                 1230

acc atc aag tct ctg aga gtc  ctg cgt gtc ctg agg  ccc ctc aag     3864
Thr Ile Lys Ser Leu Arg Val  Leu Arg Val Leu Arg  Pro Leu Lys
    1235                 1240                 1245

acc atc aag cgg ctg cct aaa  ctc aag gct gtc ttt  gac tgt gtg     3909
Thr Ile Lys Arg Leu Pro Lys  Leu Lys Ala Val Phe  Asp Cys Val
    1250                 1255                 1260

gtg aac tcc ctg aag aac gtc  ttg aac atc ctg att  gtc tac atg     3954
Val Asn Ser Leu Lys Asn Val  Leu Asn Ile Leu Ile  Val Tyr Met
    1265                 1270                 1275

ctc ttc atg ttc ata ttt gcc  gtc att gcc gtc cag  ctc ttc aaa     3999
Leu Phe Met Phe Ile Phe Ala  Val Ile Ala Val Gln  Leu Phe Lys
    1280                 1285                 1290

ggg aag ttc ttt tac tgt act  gat gaa tcc aag gag  ctg gag agg     4044
Gly Lys Phe Phe Tyr Cys Thr  Asp Glu Ser Lys Glu  Leu Glu Arg
    1295                 1300                 1305

gac tgc cgg ggt cag tat ttg  gat tat gag aag gaa  gaa gta gaa     4089
Asp Cys Arg Gly Gln Tyr Leu  Asp Tyr Glu Lys Glu  Glu Val Glu
    1310                 1315                 1320

gcc cag cca agg cag tgg aag  aaa tat gac ttc cac  tat gac aat     4134
Ala Gln Pro Arg Gln Trp Lys  Lys Tyr Asp Phe His  Tyr Asp Asn
    1325                 1330                 1335

gtt ctc tgg gcc ttg ttg acg  ctg ttc aca gtg tcc  acg gga gag     4179
Val Leu Trp Ala Leu Leu Thr  Leu Phe Thr Val Ser  Thr Gly Glu
    1340                 1345                 1350

ggg tgg ccc atg gtg ctg aaa  cac tct gtg gat gcc  acc tat gag     4224
Gly Trp Pro Met Val Leu Lys  His Ser Val Asp Ala  Thr Tyr Glu
    1355                 1360                 1365

gaa cag ggg ccc agt ccc ggc  ttc cgg atg gag ctc  tcc atc ctc     4269
Glu Gln Gly Pro Ser Pro Gly  Phe Arg Met Glu Leu  Ser Ile Leu
    1370                 1375                 1380

tac gtg gtc tac ttt gtg gtc  ttc cct ttt ttc ttt  gtc aac atc     4314
Tyr Val Val Tyr Phe Val Val  Phe Pro Phe Phe Phe  Val Asn Ile
    1385                 1390                 1395

ttt gtg gcc ttg atc att atc  acc ttc cag gaa cag  gga gat aag     4359
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Phe Val Ala Leu Ile Ile Ile Thr Phe Gln Glu Gln Gly Asp Lys
    1400            1405            1410

gtg atg tct gaa tgc agc tta gaa aag aat gag agg gct tgc att        4404
Val Met Ser Glu Cys Ser Leu Glu Lys Asn Glu Arg Ala Cys Ile
    1415            1420            1425

gat ttt gcc atc agt gcc aag ccc ctg aca cgg tac atg cct caa        4449
Asp Phe Ala Ile Ser Ala Lys Pro Leu Thr Arg Tyr Met Pro Gln
    1430            1435            1440

aac aaa cag tcg ttc cag tat aag aca tgg aca ttc gtg gtc tct        4494
Asn Lys Gln Ser Phe Gln Tyr Lys Thr Trp Thr Phe Val Val Ser
    1445            1450            1455

cca ccc ttt gag tac ttc atc atg gct atg ata gcc ctc aac aca        4539
Pro Pro Phe Glu Tyr Phe Ile Met Ala Met Ile Ala Leu Asn Thr
    1460            1465            1470

gtg gtg ctg atg atg aag ttc tat gat gca cct tat gag tac gag        4584
Val Val Leu Met Met Lys Phe Tyr Asp Ala Pro Tyr Glu Tyr Glu
    1475            1480            1485

ctg atg ctg aaa tgc ctg aac att gtc ttc aca tcc atg ttc tcg        4629
Leu Met Leu Lys Cys Leu Asn Ile Val Phe Thr Ser Met Phe Ser
    1490            1495            1500

atg gag tgc ata ctg aag atc atc gcc ttt ggg gta ttg aac tac        4674
Met Glu Cys Ile Leu Lys Ile Ile Ala Phe Gly Val Leu Asn Tyr
    1505            1510            1515

ttc aga gat gcc tgg aat gtc ttt gac ttt gtc acg gtt ttg gga        4719
Phe Arg Asp Ala Trp Asn Val Phe Asp Phe Val Thr Val Leu Gly
    1520            1525            1530

agt att act gat att tta gta aca gag att gcg gaa acg aac aac        4764
Ser Ile Thr Asp Ile Leu Val Thr Glu Ile Ala Glu Thr Asn Asn
    1535            1540            1545

ttc atc aac cta agc ttc ctt cgc ctc ttc cgg gcg gca cgg ctg        4809
Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu
    1550            1555            1560

atc aag ctg ctt cgc cag ggc tac acc atc cgc atc cta ttg tgg        4854
Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp
    1565            1570            1575

acc ttc gtc cag tcc ttt aag gcg ctg ccc tac gtg tgc ctc ctc        4899
Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu
    1580            1585            1590

att gcc atg ctg ttc ttc atc tac gcc atc atc gga atg cag gtt        4944
Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val
    1595            1600            1605

ttt gga aac agt gcc ctt gat gat gac acc agt atc aac cga cac        4989
Phe Gly Asn Ser Ala Leu Asp Asp Asp Thr Ser Ile Asn Arg His
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aac aac ttc cgg aca ttt ctg  caa gcc ata atg cta  ttg ttc agg        5034
Asn Asn Phe Arg Thr Phe Leu  Gln Ala Ile Met Leu  Leu Phe Arg
    1625                1630                1635

agt gcc act ggg gag gcc tgg  cat gag atc atg ctg  tca tgt ctg        5079
Ser Ala Thr Gly Glu Ala Trp  His Glu Ile Met Leu  Ser Cys Leu
    1640                1645                1650

gac aac cgg gcc tgt gac cca  cat gcc aac gcc agt  gag tgc ggg        5124
Asp Asn Arg Ala Cys Asp Pro  His Ala Asn Ala Ser  Glu Cys Gly
    1655                1660                1665

agc gac ttt gcc tat ttt tat  ttt gtc tcc ttc atc  ttc ctc tgt        5169
Ser Asp Phe Ala Tyr Phe Tyr  Phe Val Ser Phe Ile  Phe Leu Cys
    1670                1675                1680

tcc ttt ctg atg ttg aac ctc  ttt gtt gct gta atc  atg gac aat        5214
Ser Phe Leu Met Leu Asn Leu  Phe Val Ala Val Ile  Met Asp Asn
    1685                1690                1695

ttt gag tac ctc act cgg gac  tct tcc atc cta ggg  cct cac cac        5259
Phe Glu Tyr Leu Thr Arg Asp  Ser Ser Ile Leu Gly  Pro His His
    1700                1705                1710

tta gac gaa ttc att cga gtc  tgg gct gaa tac gac  cca gct gcg        5304
Leu Asp Glu Phe Ile Arg Val  Trp Ala Glu Tyr Asp  Pro Ala Ala
    1715                1720                1725

tgt ggg cgc atc agt tac aat  gac atg ttt gag atg  ctg aaa cac        5349
Cys Gly Arg Ile Ser Tyr Asn  Asp Met Phe Glu Met  Leu Lys His
    1730                1735                1740

atg tcc cca cct ctg ggg ttg  ggg aag aaa tgc ccg  gct cga gtt        5394
Met Ser Pro Pro Leu Gly Leu  Gly Lys Lys Cys Pro  Ala Arg Val
    1745                1750                1755

gca tac aag cgc ctg gtt cgc  atg aac atg ccc ata  tcc aat gag        5439
Ala Tyr Lys Arg Leu Val Arg  Met Asn Met Pro Ile  Ser Asn Glu
    1760                1765                1770

gac atg acg gtg cac ttt acg  tcc aca ctg atg gcc  ctc atc cgg        5484
Asp Met Thr Val His Phe Thr  Ser Thr Leu Met Ala  Leu Ile Arg
    1775                1780                1785

aca gca ctg gag atc aag ctt  gcc cca gct gac gag  atg aca gtg        5529
Thr Ala Leu Glu Ile Lys Leu  Ala Pro Ala Asp Glu  Met Thr Val
    1790                1795                1800

ggg aag gtc tat gct gct ctc  atg ata ttt gac ttc  tac aaa cag        5574
Gly Lys Val Tyr Ala Ala Leu  Met Ile Phe Asp Phe  Tyr Lys Gln
    1805                1810                1815

aac aaa acc acc aga gat cag  act cac caa gct ccc  gga ggc ctg        5619
Asn Lys Thr Thr Arg Asp Gln  Thr His Gln Ala Pro  Gly Gly Leu
    1820                1825                1830
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tcc cag atg ggt ccc gtt tcc   ctg ttc cac cct ctg   aag gcc acc         5664
Ser Gln Met Gly Pro Val Ser   Leu Phe His Pro Leu   Lys Ala Thr
    1835                1840                  1845

ctg gaa cag aca cag ccc gct   gtg ctt cga gga gct   cgg gtt ttc         5709
Leu Glu Gln Thr Gln Pro Ala   Val Leu Arg Gly Ala   Arg Val Phe
    1850                1855                  1860

ctt cgg caa aag agt gca act   tcc ctc agc aat ggg   ggt gcc ata         5754
Leu Arg Gln Lys Ser Ala Thr   Ser Leu Ser Asn Gly   Gly Ala Ile
    1865                1870                  1875

caa acc cag gaa agt gga tca   agg agt cgc tgt cct   ggg gga cgc         5799
Gln Thr Gln Glu Ser Gly Ser   Arg Ser Arg Cys Pro   Gly Gly Arg
    1880                1885                  1890

aga ggg acc caa gat gca ctt   tat gag ggc aga gca   cct cta gaa         5844
Arg Gly Thr Gln Asp Ala Leu   Tyr Glu Gly Arg Ala   Pro Leu Glu
    1895                1900                  1905

cgt gac cat tct aaa gag atc   cct gtg ggg cag tca   gga aca ctg         5889
Arg Asp His Ser Lys Glu Ile   Pro Val Gly Gln Ser   Gly Thr Leu
    1910                1915                  1920

ctg gtg gat gtc cag atg cag   aac atg aca ctg aga   gga cca gat         5934
Leu Val Asp Val Gln Met Gln   Asn Met Thr Leu Arg   Gly Pro Asp
    1925                1930                  1935

ggg gat ccc cag cct ggc ctg   gaa agc caa ggc aga   gct gcc tct         5979
Gly Asp Pro Gln Pro Gly Leu   Glu Ser Gln Gly Arg   Ala Ala Ser
    1940                1945                  1950

atg cta cgc cta gcg gca gaa   aca cag ccg gcc cct   aat gcc agc         6024
Met Leu Arg Leu Ala Ala Glu   Thr Gln Pro Ala Pro   Asn Ala Ser
    1955                1960                  1965

ccc atg aag cgc tcc atc tcc   aca ctg gct cca cgc   cca gat ggg         6069
Pro Met Lys Arg Ser Ile Ser   Thr Leu Ala Pro Arg   Pro Asp Gly
    1970                1975                  1980

act cag ctt tgc agc aca gtt   ctg gac cgg cct cct   cct agc cag         6114
Thr Gln Leu Cys Ser Thr Val   Leu Asp Arg Pro Pro   Pro Ser Gln
    1985                1990                  1995

gca tca cat cac cac cac cac   cgc tgc cac cgg cgc   aga gac aag         6159
Ala Ser His His His His His   Arg Cys His Arg Arg   Arg Asp Lys
    2000                2005                  2010

aag caa agg tcc ctg gaa aag   ggg ccc agc ctg tct   gtt gac cca         6204
Lys Gln Arg Ser Leu Glu Lys   Gly Pro Ser Leu Ser   Val Asp Pro
    2015                2020                  2025

gaa ggt gca cca agc act gct   gct gca gga cct ggt   ctg ccc cat         6249
Glu Gly Ala Pro Ser Thr Ala   Ala Ala Gly Pro Gly   Leu Pro His
    2030                2035                  2040
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gga gaa gga tcc acc gcc tgc  cgg cgg gac cgt aaa  cag gag cga      6294
Gly Glu Gly Ser Thr Ala Cys  Arg Arg Asp Arg Lys  Gln Glu Arg
    2045            2050                 2055

ggc cgg tcc cag gag cgg agg  cag ccc tca tct tcc  tct tca gag      6339
Gly Arg Ser Gln Glu Arg Arg  Gln Pro Ser Ser Ser  Ser Ser Glu
    2060            2065                 2070

aag cag cgc ttc tat tcc tgt  gac cgc ttg gga gcc  ggg agc ccc      6384
Lys Gln Arg Phe Tyr Ser Cys  Asp Arg Leu Gly Ala  Gly Ser Pro
    2075            2080                 2085

caa ctg atg ccc tca ctc agt  agc cac ccc aca tcg  ccg gcg gcg      6429
Gln Leu Met Pro Ser Leu Ser  Ser His Pro Thr Ser  Pro Ala Ala
    2090            2095                 2100

gcg cta gag cca gca ccc cac  cca cag ggc agt ggt  tcc gtt aat      6474
Ala Leu Glu Pro Ala Pro His  Pro Gln Gly Ser Gly  Ser Val Asn
    2105            2110                 2115

ggg agc ccc ttg atg tca aca  tcc ggt gct att act  ccc ggg cga      6519
Gly Ser Pro Leu Met Ser Thr  Ser Gly Ala Ile Thr  Pro Gly Arg
    2120            2125                 2130

ggt ggg cgg agg cag ctc ccc  cag act cct ctg acc  cca cgc ccc      6564
Gly Gly Arg Arg Gln Leu Pro  Gln Thr Pro Leu Thr  Pro Arg Pro
    2135            2140                 2145

agc atc acc tac aag acc gcc  aat tcc tcg cct gtc  cac ttt gct      6609
Ser Ile Thr Tyr Lys Thr Ala  Asn Ser Ser Pro Val  His Phe Ala
    2150            2155                 2160

gag ggt cag agc ggc ctc cca  gcc ttc tcc cct ggc  cgt ctc agc      6654
Glu Gly Gln Ser Gly Leu Pro  Ala Phe Ser Pro Gly  Arg Leu Ser
    2165            2170                 2175

cgc ggc ctt tct gaa cac aat  gcc ctg ctc cag aaa  gag ccc ctg      6699
Arg Gly Leu Ser Glu His Asn  Ala Leu Leu Gln Lys  Glu Pro Leu
    2180            2185                 2190

agc cag cct cta gct cct ggc  tcc cga att ggc tct  gac cct tac      6744
Ser Gln Pro Leu Ala Pro Gly  Ser Arg Ile Gly Ser  Asp Pro Tyr
    2195            2200                 2205

cta ggg cag cgt ctg gac agt  gag gcc tcc gcc cac  acc ctg cct      6789
Leu Gly Gln Arg Leu Asp Ser  Glu Ala Ser Ala His  Thr Leu Pro
    2210            2215                 2220

gag gat aca ctc acc ttt gaa  gag gca gtg gcc acc  aac tct ggc      6834
Glu Asp Thr Leu Thr Phe Glu  Glu Ala Val Ala Thr  Asn Ser Gly
    2225            2230                 2235

cgc tcc tcc agg act tcc tat  gtg tcc tcc ctc act  tcc caa tcc      6879
Arg Ser Ser Arg Thr Ser Tyr  Val Ser Ser Leu Thr  Ser Gln Ser
    2240            2245                 2250

cac cct ctc cgc cgt gta ccc  aat ggc tat cac tgc  act ttg gga      6924
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His Pro  Leu Arg Arg Val Pro  Asn Gly Tyr His Cys  Thr Leu Gly
    2255                 2260             2265

ctc aac  act ggc gtc ggg gca  cga gca agc tac cac  cac ccc gat    6969
Leu Asn  Thr Gly Val Gly Ala  Arg Ala Ser Tyr His  His Pro Asp
    2270                 2275             2280

cag gac  cac tgg tgc tag cttcaccacg accacccatg taccagctcc         7017
Gln Asp  His Trp Cys
    2285

atgggtgagg gttccagttg atgagtttta tcatcccact ctggactgtg gggtcacaac  7077

cctgggagga gggccctcac atctcggcct ctgtggtgga ggctcctgct tccctccctc  7137

cctccctttt tacactggat agactaataa agccctttct tagagggg            7185


<210>  40
<211>  2288
<212>  PRT
<213>  Mus musculus

<400>  40

Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Thr Gly
1               5                   10                  15


Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
            20                  25                  30


Gly Gln Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
        35                  40                  45


Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
    50                  55                  60


Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65                  70                  75                  80


Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                85                  90                  95


Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
            100                 105                 110


Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
        115                 120                 125
```

Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
    130   135   140

Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Phe His Lys Gly Ser
145   150   155   160

Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
            165   170   175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
            180   185   190

Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
        195   200   205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
    210   215   220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Gly Ile Ile
225   230   235   240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
            245   250   255

Ser Thr Asp Thr Glu Pro Val Gly Asp Phe Pro Cys Gly Lys Asp Pro
            260   265   270

Pro Ala Arg Gln Cys Asp Gly Asp Thr Glu Cys Arg Glu Tyr Trp Pro
        275   280   285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
    290   295   300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305   310   315   320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
            325   330   335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
        340   345   350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn

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            355                    360                         365


Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
    370                 375             380


Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385                 390             395                         400


Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
                405                 410                 415


Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
            420                 425                 430


Glu Gly Glu Asp Arg Phe Val Asp Leu Cys Ala Val Gly Ser Pro Phe
        435                 440                 445


Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
    450                 455                 460


Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
465                 470                 475                     480


Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
            485                 490                 495


Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr Thr
            500                 505                 510


Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
        515                 520                 525


Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
    530                 535                 540


Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe Glu
545                 550                 555                     560


Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser Val
            565                 570                 575


Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
            580                 585                 590
```

Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
        595   600   605

Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
        610   615   620

Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625   630   635   640

Thr Pro Thr Thr Ile Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
                645   650   655

Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
            660   665   670

Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe Tyr
        675   680   685

Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
    690   695   700

Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
705   710   715   720

Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
            725   730   735

Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
            740   745   750

Ser Ile Ala Ala Gln Glu Asn Ser Ala Lys Ala Arg Ser Val Trp Glu
        755   760   765

Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys Glu
    770   775   780

Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr Ala Ser
785   790   795   800

Thr Arg His Val Arg Pro Asp Met Lys Thr His Met Asp Arg Pro Leu
                805   810   815

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Val Val Glu Pro Gly Arg Asp Gly Leu Arg Gly Pro Val Gly Ser Lys
        820             825             830

Ser Lys Pro Glu Gly Thr Glu Ala Thr Glu Ser Ala Asp Leu Pro Arg
        835             840             845

Arg His His Arg His Arg Asp Arg Asp Lys Thr Ser Ala Thr Ala Pro
    850             855             860

Ala Gly Gly Glu Gln Asp Arg Thr Glu Ser Thr Glu Thr Gly Pro Arg
865             870             875             880

Glu Glu Arg Ala Arg Pro Arg Arg Ser His Ser Lys Glu Thr Pro Gly
            885             890             895

Ala Asp Thr Gln Val Arg Cys Glu Arg Ser Arg Arg His His Arg Arg
        900             905             910

Gly Ser Pro Glu Glu Ala Thr Glu Arg Glu Pro Arg Arg His Arg Ala
        915             920             925

His Arg His Ala Gln Asp Ser Ser Lys Glu Gly Thr Ala Pro Val Leu
    930             935             940

Val Pro Lys Gly Glu Arg Arg Ala Arg His Arg Gly Pro Arg Thr Gly
945             950             955             960

Pro Arg Glu Ala Glu Asn Asn Glu Glu Pro Thr Arg Arg His Arg Ala
            965             970             975

Arg His Lys Val Pro Pro Thr Leu Gln Pro Pro Glu Arg Glu Ala Ala
        980             985             990

Glu Lys Glu Ser Asn Ala Val Glu   Gly Asp Lys Glu Thr   Arg Asn His
        995             1000            1005

Gln Pro   Lys Glu Pro His Cys   Asp Leu Glu Ala Ile   Ala Val Thr
    1010            1015            1020

Gly Val   Gly Pro Leu His Met   Leu Pro Ser Thr Cys   Leu Gln Lys
    1025            1030            1035
```

Val Asp Glu Gln Pro Glu Asp Ala Asp Asn Gln Arg Asn Val Thr
    1040   1045   1050

Arg Met Gly Ser Gln Pro Ser Asp Pro Ser Thr Thr Val His Val
    1055   1060   1065

Pro Val Thr Leu Thr Gly Pro Pro Gly Glu Thr Pro Val Val Pro
    1070   1075   1080

Ser Gly Asn Met Asn Leu Glu Gly Gln Ala Glu Gly Lys Lys Glu
    1085   1090   1095

Ala Glu Ala Asp Asp Val Leu Arg Arg Gly Pro Arg Pro Ile Val
    1100   1105   1110

Pro Tyr Ser Ser Met Phe Cys Leu Ser Pro Thr Asn Leu Phe Arg
    1115   1120   1125

Arg Phe Cys His Tyr Ile Val Thr Met Arg Tyr Leu Glu Met Val
    1130   1135   1140

Ile Leu Val Val Ile Ala Leu Ser Ser Ile Ala Leu Ala Ala Glu
    1145   1150   1155

Asp Pro Val Arg Thr Asp Ser Phe Arg Asn Asn Ala Leu Glu Tyr
    1160   1165   1170

Met Asp Tyr Ile Phe Thr Gly Val Phe Thr Cys Glu Met Val Ile
    1175   1180   1185

Lys Met Ile Asp Leu Gly Leu Leu Leu His Pro Gly Ala Tyr Phe
    1190   1195   1200

Arg Asp Leu Trp Asn Ile Leu Asp Phe Ile Val Val Ser Gly Ala
    1205   1210   1215

Leu Val Ala Phe Ala Phe Ser Gly Ser Lys Gly Lys Asp Ile Asn
    1220   1225   1230

Thr Ile Lys Ser Leu Arg Val Leu Arg Val Leu Arg Pro Leu Lys
    1235   1240   1245

Thr Ile Lys Arg Leu Pro Lys Leu Lys Ala Val Phe Asp Cys Val

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            1250                    1255                     1260

Val Asn  Ser Leu Lys Asn Val  Leu Asn Ile Leu Ile  Val Tyr Met
    1265                 1270                 1275


Leu Phe  Met Phe Ile Phe Ala  Val Ile Ala Val Gln  Leu Phe Lys
    1280                 1285                 1290


Gly Lys  Phe Phe Tyr Cys Thr  Asp Glu Ser Lys Glu  Leu Glu Arg
    1295                 1300                 1305


Asp Cys  Arg Gly Gln Tyr Leu  Asp Tyr Glu Lys Glu  Glu Val Glu
    1310                 1315                 1320


Ala Gln  Pro Arg Gln Trp Lys  Lys Tyr Asp Phe His  Tyr Asp Asn
    1325                 1330                 1335


Val Leu  Trp Ala Leu Leu Thr  Leu Phe Thr Val Ser  Thr Gly Glu
    1340                 1345                 1350


Gly Trp  Pro Met Val Leu Lys  His Ser Val Asp Ala  Thr Tyr Glu
    1355                 1360                 1365


Glu Gln  Gly Pro Ser Pro Gly  Phe Arg Met Glu Leu  Ser Ile Leu
    1370                 1375                 1380


Tyr Val  Val Tyr Phe Val Val  Phe Pro Phe Phe Phe  Val Asn Ile
    1385                 1390                 1395


Phe Val  Ala Leu Ile Ile Ile  Thr Phe Gln Glu Gln  Gly Asp Lys
    1400                 1405                 1410


Val Met  Ser Glu Cys Ser Leu  Glu Lys Asn Glu Arg  Ala Cys Ile
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Asp Phe  Ala Ile Ser Ala Lys  Pro Leu Thr Arg Tyr  Met Pro Gln
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Asn Lys  Gln Ser Phe Gln Tyr  Lys Thr Trp Thr Phe  Val Val Ser
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Pro Pro  Phe Glu Tyr Phe Ile  Met Ala Met Ile Ala  Leu Asn Thr
    1460                 1465                 1470
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Val Val Leu Met Met Lys Phe Tyr Asp Ala Pro Tyr Glu Tyr Glu
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Leu Met Leu Lys Cys Leu Asn Ile Val Phe Thr Ser Met Phe Ser
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Met Glu Cys Ile Leu Lys Ile Ile Ala Phe Gly Val Leu Asn Tyr
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Phe Arg Asp Ala Trp Asn Val Phe Asp Phe Val Thr Val Leu Gly
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Ser Ile Thr Asp Ile Leu Val Thr Glu Ile Ala Glu Thr Asn Asn
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Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu
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Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp
    1565   1570   1575

Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu
    1580   1585   1590

Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val
    1595   1600   1605

Phe Gly Asn Ser Ala Leu Asp Asp Asp Thr Ser Ile Asn Arg His
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Asn Asn Phe Arg Thr Phe Leu Gln Ala Ile Met Leu Leu Phe Arg
    1625   1630   1635

Ser Ala Thr Gly Glu Ala Trp His Glu Ile Met Leu Ser Cys Leu
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Asp Asn Arg Ala Cys Asp Pro His Ala Asn Ala Ser Glu Cys Gly
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Ser Asp Phe Ala Tyr Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys
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Ser Phe Leu Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn
    1685   1690   1695

Phe Glu Tyr Leu Thr Arg Asp Ser Ser Ile Leu Gly Pro His His
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Leu Asp Glu Phe Ile Arg Val Trp Ala Glu Tyr Asp Pro Ala Ala
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Cys Gly Arg Ile Ser Tyr Asn Asp Met Phe Glu Met Leu Lys His
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Met Ser Pro Pro Leu Gly Leu Gly Lys Lys Cys Pro Ala Arg Val
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Ala Tyr Lys Arg Leu Val Arg Met Asn Met Pro Ile Ser Asn Glu
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Asp Met Thr Val His Phe Thr Ser Thr Leu Met Ala Leu Ile Arg
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Thr Ala Leu Glu Ile Lys Leu Ala Pro Ala Asp Glu Met Thr Val
    1790   1795   1800

Gly Lys Val Tyr Ala Ala Leu Met Ile Phe Asp Phe Tyr Lys Gln
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Asn Lys Thr Thr Arg Asp Gln Thr His Gln Ala Pro Gly Gly Leu
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Ser Gln Met Gly Pro Val Ser Leu Phe His Pro Leu Lys Ala Thr
    1835   1840   1845

Leu Glu Gln Thr Gln Pro Ala Val Leu Arg Gly Ala Arg Val Phe
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Leu Arg Gln Lys Ser Ala Thr Ser Leu Ser Asn Gly Gly Ala Ile
    1865   1870   1875

Gln Thr Gln Glu Ser Gly Ser Arg Ser Arg Cys Pro Gly Gly Arg
    1880   1885   1890

Arg Gly Thr Gln Asp Ala Leu Tyr Glu Gly Arg Ala Pro Leu Glu
    1895   1900   1905

Arg Asp His Ser Lys Glu Ile Pro Val Gly Gln Ser Gly Thr Leu
    1910   1915   1920

Leu Val Asp Val Gln Met Gln Asn Met Thr Leu Arg Gly Pro Asp
    1925   1930   1935

Gly Asp Pro Gln Pro Gly Leu Glu Ser Gln Gly Arg Ala Ala Ser
    1940   1945   1950

Met Leu Arg Leu Ala Ala Glu Thr Gln Pro Ala Pro Asn Ala Ser
    1955   1960   1965

Pro Met Lys Arg Ser Ile Ser Thr Leu Ala Pro Arg Pro Asp Gly
    1970   1975   1980

Thr Gln Leu Cys Ser Thr Val Leu Asp Arg Pro Pro Pro Ser Gln
    1985   1990   1995

Ala Ser His His His His His Arg Cys His Arg Arg Arg Asp Lys
    2000   2005   2010

Lys Gln Arg Ser Leu Glu Lys Gly Pro Ser Leu Ser Val Asp Pro
    2015   2020   2025

Glu Gly Ala Pro Ser Thr Ala Ala Ala Gly Pro Gly Leu Pro His
    2030   2035   2040

Gly Glu Gly Ser Thr Ala Cys Arg Arg Asp Arg Lys Gln Glu Arg
    2045   2050   2055

Gly Arg Ser Gln Glu Arg Arg Gln Pro Ser Ser Ser Ser. Ser Glu
    2060   2065   2070

Lys Gln Arg Phe Tyr Ser Cys Asp Arg Leu Gly Ala Gly Ser Pro
    2075   2080   2085

Gln Leu Met Pro Ser Leu Ser Ser His Pro Thr Ser Pro Ala Ala
    2090   2095   2100

Ala Leu Glu Pro Ala Pro His Pro Gln Gly Ser Gly Ser Val Asn

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        2105                    2110                       2115


Gly Ser  Pro Leu Met Ser Thr  Ser Gly Ala Ile Thr  Pro Gly Arg
    2120                 2125                 2130


Gly Gly  Arg Arg Gln Leu Pro  Gln Thr Pro Leu Thr  Pro Arg Pro
    2135                 2140                 2145


Ser Ile  Thr Tyr Lys Thr Ala  Asn Ser Ser Pro Val  His Phe Ala
    2150                 2155                 2160


Glu Gly  Gln Ser Gly Leu Pro  Ala Phe Ser Pro Gly  Arg Leu Ser
    2165                 2170                 2175


Arg Gly  Leu Ser Glu His Asn  Ala Leu Leu Gln Lys  Glu Pro Leu
    2180                 2185                 2190


Ser Gln  Pro Leu Ala Pro Gly  Ser Arg Ile Gly Ser  Asp Pro Tyr
    2195                 2200                 2205


Leu Gly  Gln Arg Leu Asp Ser  Glu Ala Ser Ala His  Thr Leu Pro
    2210                 2215                 2220


Glu Asp  Thr Leu Thr Phe Glu  Glu Ala Val Ala Thr  Asn Ser Gly
    2225                 2230                 2235


Arg Ser  Ser Arg Thr Ser Tyr  Val Ser Ser Leu Thr  Ser Gln Ser
    2240                 2245                 2250


His Pro  Leu Arg Arg Val Pro  Asn Gly Tyr His Cys  Thr Leu Gly
    2255                 2260                 2265


Leu Asn  Thr Gly Val Gly Ala  Arg Ala Ser Tyr His  His Pro Asp
    2270                 2275                 2280


Gln Asp  His Trp Cys
    2285


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atg gtc cgc ttc ggg gac gag ctg ggc ggc cgc tat ggg ggc gcg ggc   168
Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Ala Gly
1   5   10   15

ggc gcg gag cgg gcc cgg ggc ggc ggg gcc ggc ggg gct ggc ggc ccg   216
Gly Ala Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
            20   25   30

ggc ccc ggg ggg ctg ccg ccg ggc cag cgg gtc ctc tac aaa cag tcg   264
Gly Pro Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
        35   40   45

atc gcg cag cgc gcg cgg acc atg gcg ctg tac aac ccc atc ccg gtc   312
Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
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aag cag aac tgc ttc acc gtc aac cgc tcg ctc ttc gtc ttc agc gag   360
Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65   70   75   80

gac aac gtc gtc cgc aaa tac gcc aag cgc atc acc gag tgg cct ccg   408
Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                85   90   95

ttc gag tac atg atc ctg gcc acc atc atc gcc aac tgc atc gtg ctg   456
Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
            100   105   110

gcc ctg gag cag cac ctc cct gac ggg gac aag acg cct atg tcc gag   504
Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
            115   120   125

cgc ctg gat gac acc gag ccc tac ttc att ggg atc ttc tgc ttc gag   552
Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
    130   135   140

gcg ggg atc aag atc ctg gcc ctg ggc ttt gtt ctg cac aag ggc tcc   600
Ala Gly Ile Lys Ile Leu Ala Leu Gly Phe Val Leu His Lys Gly Ser
145   150   155   160

tat ctg cgg aac ggc tgg aac gtc atg gac ttc gtg gta gtc ctc acg   648
Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
                165   170   175

ggg att ctt gcc aca gcc gga acc gac ttc gac ctg cga acg ctg agg   696
Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
            180   185   190

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gct gtg cgt gtg cta agg ccc ctg aag ctg gtg tct ggg att ccg agc    744
Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
        195                 200                 205

ttg cag gtg gtg ctc aag tcc atc atg aag gcc atg gtc ccg ctg ctg    792
Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
        210                 215                 220

cag atc ggg ctg ctg ctc ttc ttc gcc atc ctc atg ttt gcc atc atc    840
Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225                 230                 235                 240

ggc ctc gag ttc tac atg ggc aag ttc cac aag gcc tgc ttc ccc aac    888
Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
                245                 250                 255

agc aca gac cca gat ccc gtg ggt gac ttc ccc tgt ggc aag gag gcc    936
Ser Thr Asp Pro Asp Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
            260                 265                 270

ccg gcc cgg ctc tgt gag gga gac acg gag tgc cgg gag tac tgg gcc    984
Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp Ala
        275                 280                 285

gga ccc aac ttt ggt atc acc aac ttt gac aac atc ctg ttt gcc atc    1032
Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
        290                 295                 300

ttg acc gtg ttc cag tgc atc acc atg gag ggc tgg act gac atc ctc    1080
Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305                 310                 315                 320

tac aat aca aac gat gca gcc ggc aac acg tgg aac tgg ctc tac ttc    1128
Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
            325                 330                 335

atc cct ctc atc atc atc ggc tcc ttc ttc atg ctc aac ctg gtg ctg    1176
Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
            340                 345                 350

ggt gtg ctc tca gga gag ttt gct aag gag cgc gag aga gtg gag aac    1224
Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
            355                 360                 365

cgc cgc gcc ttc ctg aag ctc cgg cgg cag cag cag att gag cgg gag    1272
Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
        370                 375                 380

ctc aac ggg tac ctg gag tgg atc ttc aag gct gag gaa gtc atg ctg    1320
Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385                 390                 395                 400

gct gag gag gac agg aac gca gag gag aag tcc cct ctg gat gca gtg    1368
Ala Glu Glu Asp Arg Asn Ala Glu Glu Lys Ser Pro Leu Asp Ala Val
            405                 410                 415

ttg aag aga gca gct gcc aag aag agc aga agc gac ctg atc cag gcc    1416
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Leu Lys Arg Ala Ala Ala Lys Lys Ser Arg Ser Asp Leu Ile Gln Ala
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gag gag ggg gag ggc cgg ctc aca ggc ctc tgt gct ccc ggt tcc ccg    1464
Glu Glu Gly Glu Gly Arg Leu Thr Gly Leu Cys Ala Pro Gly Ser Pro
        435             440             445

ttc gcc cgt gcc agc ctg aaa agc ggg aag acg gag agc tcg tcg tac    1512
Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr
        450             455             460

ttc cgg agg aag gag aag atg ttc cgc ttc ttc atc cgg cgc atg gtg    1560
Phe Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val
465             470             475             480

aag gca cag agc ttc tac tgg acg gtg ctg tgt gtg gtg gca ctg aac    1608
Lys Ala Gln Ser Phe Tyr Trp Thr Val Leu Cys Val Val Ala Leu Asn
                485             490             495

aca ctg tgc gtg gcc atg gtg cac tac aac cag ccg cag cgg ctc acc    1656
Thr Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr
            500             505             510

acg gca ttg tac ttt gca gag ttt gtt ttc ctg ggt ctc ttc ctc aca    1704
Thr Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr
            515             520             525

gag atg tcc ctg aag atg tat ggc ctg ggg ccc agg agc tac ttc cgg    1752
Glu Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg
        530             535             540

tcc tcc ttc aac tgt ttt gac ttt ggg gtc atc gtg ggc agt atc ttt    1800
Ser Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe
545             550             555             560

gaa gtg gtc tgg gct gct gtc aag cca ggg acc tcc ttc ggg atc agt    1848
Glu Val Val Trp Ala Ala Val Lys Pro Gly Thr Ser Phe Gly Ile Ser
                565             570             575

gtt ctg cgg gct ctg cgc tta ctg aga atc ttc aag gtc acc aaa tac    1896
Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr
            580             585             590

tgg aac tcc cta cgg aac ctg gtg gtg tct ctg ctc aac tcc atg aag    1944
Trp Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys
            595             600             605

tcc atc atc agc ctc ctc ttc ctg ctc ttc ctg ttc att gtt gtc ttt    1992
Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe
            610             615             620

gct ctg ctg ggg atg cag ctg ttt gga ggc cag ttc aac ttt aaa gac    2040
Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Lys Asp
625             630             635             640

gag acc cca acg acc aac ttt gac acc ttc cct gct gct atc ctc acc    2088
Glu Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr
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gtc ttc cag atc ctg acc gga gag gac tgg aat gcg gtc atg tac cac        2136
Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His
            660                      665                      670

ggg atc gag tcg caa ggt ggc gtc agc aga gga atg ttc tcc tcc ttc        2184
Gly Ile Glu Ser Gln Gly Gly Val Ser Arg Gly Met Phe Ser Ser Phe
            675                      680                      685

tac ttc att gtc ctc act ctg ttt ggg aac tac acc ctg ctg aat gtc        2232
Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val
            690                      695                      700

ttc ctg gcc att gct gtg gac aac ctt gcc aat gct cag gag ctg acc        2280
Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr
705                      710                      715                      720

aag gat gaa gag gag atg gaa gaa gca gcc aat cag aaa ctc gcc ttg        2328
Lys Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu
                      725                      730                      735

cag aag gcc aag gaa gtg gct gaa gtc agc ccc atg tct gct gcg aac        2376
Gln Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn
                740                      745                      750

atc tcc att gcc gcc agg cag cag aac tcg gcc aaa gcg cgc tcg gtg        2424
Ile Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val
            755                      760                      765

tgg gag cag cga gcc agc cag ctg cgg ctg cag aac ctg agg gcc agc        2472
Trp Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser
            770                      775                      780

tgc gag gcg ctg tac agc gag atg gac ccc gag gag agg ctg cgc tac        2520
Cys Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr
785                      790                      795                      800

gcc acc gcg cgc cac ctg cgg ccc gac gtg aag acg cac ctg gac cgg        2568
Ala Thr Ala Arg His Leu Arg Pro Asp Val Lys Thr His Leu Asp Arg
                805                      810                      815

ccg ctg gtg gtt gag ccc ggc cgc gac gct ccg cgg ggc ccc ccg ggg        2616
Pro Leu Val Val Glu Pro Gly Arg Asp Ala Pro Arg Gly Pro Pro Gly
                820                      825                      830

ggg aag tcc cgg ccg gat ggc tcg gag gcc ccc gag ggt gcg gat ccc        2664
Gly Lys Ser Arg Pro Asp Gly Ser Glu Ala Pro Glu Gly Ala Asp Pro
            835                      840                      845

ccg cgc agg cat cac cgg cac cga gac aag gac aag gct ccc gcc acg        2712
Pro Arg Arg His His Arg His Arg Asp Lys Asp Lys Ala Pro Ala Thr
            850                      855                      860

gtc ccc tcg gcg ggg gaa cag gac aga gcc gaa gct ctg agg gca gag        2760
Val Pro Ser Ala Gly Glu Gln Asp Arg Ala Glu Ala Leu Arg Ala Glu
865                      870                      875                      880
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Gly Gly Glu Leu Gly Pro Arg Glu Glu Arg Gly Arg Pro Arg Arg Ser
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cgc agc aag gag gcc ccg ggc gcc ccg gag gtg cgc agc gat cgc ggc      2856
Arg Ser Lys Glu Ala Pro Gly Ala Pro Glu Val Arg Ser Asp Arg Gly
            900                     905                 910

cgt ggc ccg tgt cct gaa ggt ggt cgg cgc cac cac cgg cgc ggg tca      2904
Arg Gly Pro Cys Pro Glu Gly Gly Arg Arg His His Arg Arg Gly Ser
            915                 920                 925

ccg gag gag gca gct gag agg gag ccc cgc cgc cac cgc gcg cac cgg      2952
Pro Glu Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala His Arg
        930                 935                 940

cac ggg ccc gac ccg ggc aag gag ggc cca gcg tcc ggg acc agg ggc      3000
His Gly Pro Asp Pro Gly Lys Glu Gly Pro Ala Ser Gly Thr Arg Gly
945                 950                 955                 960

gag cgg cgc gca cga cac cgc acg ggc ccc cgg gcg tgc ccc cgg gag      3048
Glu Arg Arg Ala Arg His Arg Thr Gly Pro Arg Ala Cys Pro Arg Glu
                965                 970                 975

gct gag agc agc gag gag cct gcg cgg cgg cac cgg gct cgg cac aag      3096
Ala Glu Ser Ser Glu Glu Pro Ala Arg Arg His Arg Ala Arg His Lys
                980                 985                 990

gcg ccg ccc acc cag gag acc gcg  gag aag gac aag gag  gct gcc gag    3144
Ala Pro Pro Thr Gln Glu Thr Ala  Glu Lys Asp Lys Glu  Ala Ala Glu
            995                 1000                1005

aag ggg  ggc gag gcc acg gag  gcc gag aag gac aag  gag gct cgg       3189
Lys Gly  Gly Glu Ala Thr Glu  Ala Glu Lys Asp Lys  Glu Ala Arg
    1010                1015                1020

aac cac  cag ccc aag gag ctg  ccc tgt gac ctg gag  gcc atc ggc       3234
Asn His  Gln Pro Lys Glu Leu  Pro Cys Asp Leu Glu  Ala Ile Gly
    1025                1030                1035

atg ctg  gga gtg ggc gct gtg  cat acg ctg ccc agc  acc tgt ctg       3279
Met Leu  Gly Val Gly Ala Val  His Thr Leu Pro Ser  Thr Cys Leu
    1040                1045                1050

cag aag  gtg gag gag cag cca  gag gat gcg gac aac  cag cgg aac       3324
Gln Lys  Val Glu Glu Gln Pro  Glu Asp Ala Asp Asn  Gln Arg Asn
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gtc acc  cgc atg ggt agt cag  ccc ccg gac acc agc  acc act gtg       3369
Val Thr  Arg Met Gly Ser Gln  Pro Pro Asp Thr Ser  Thr Thr Val
    1070                1075                1080

cac att  cct gtg acg ctg acc  ggc ccc ccc ggg gag  acc acg gta       3414
His Ile  Pro Val Thr Leu Thr  Gly Pro Pro Gly Glu  Thr Thr Val
    1085                1090                1095
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gtg ccc agt gga aac gtg gac   ctg gaa agt caa gca   gag ggg aag        3459
Val Pro Ser Gly Asn Val Asp   Leu Glu Ser Gln Ala   Glu Gly Lys
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aag gag gtg gaa acc agc gat   gtg atg agg agc ggc   cct cgg ccc        3504
Lys Glu Val Glu Thr Ser Asp   Val Met Arg Ser Gly   Pro Arg Pro
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att gtc ccg tac agt tcc atg   ttc tgt tta agc cca   acc aac ctg        3549
Ile Val Pro Tyr Ser Ser Met   Phe Cys Leu Ser Pro   Thr Asn Leu
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ctg cgc cgc tgc tgc cac tac   att gtg acc atg cga   tac ttc gag        3594
Leu Arg Arg Cys Cys His Tyr   Ile Val Thr Met Arg   Tyr Phe Glu
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atg gtc atc ctc gtg gtc atc   gcc ctg agc agc atc   gcc ctg gct        3639
Met Val Ile Leu Val Val Ile   Ala Leu Ser Ser Ile   Ala Leu Ala
    1160                1165               1170

gcc gag gac ccc gtg aga aca   gac tct ccc agg aat   aat gct ctg        3684
Ala Glu Asp Pro Val Arg Thr   Asp Ser Pro Arg Asn   Asn Ala Leu
    1175                1180               1185

aag tac atg gac tac atc ttc   aca ggc gtc ttc acc   ttc gag atg        3729
Lys Tyr Met Asp Tyr Ile Phe   Thr Gly Val Phe Thr   Phe Glu Met
    1190                1195               1200

gtg ata aag atg atc gat ttg   gga ctg ctg cta cac   cct gga gcc        3774
Val Ile Lys Met Ile Asp Leu   Gly Leu Leu Leu His   Pro Gly Ala
    1205                1210               1215

tat ttc cgg gat ctg tgg aac   att ctg gac ttc att   gtg gtc agt        3819
Tyr Phe Arg Asp Leu Trp Asn   Ile Leu Asp Phe Ile   Val Val Ser
    1220                1225               1230

ggg gcc ctg gtg gca ttt gct   ttc tca gga tcc aaa   ggg aaa gac        3864
Gly Ala Leu Val Ala Phe Ala   Phe Ser Gly Ser Lys   Gly Lys Asp
    1235                1240               1245

atc agc acc atc aaa tcc ctg   aga gtc ctg cgt gtg   ctg cgg cca        3909
Ile Ser Thr Ile Lys Ser Leu   Arg Val Leu Arg Val   Leu Arg Pro
    1250                1255               1260

ctc aag acc atc aag cgg ctg   ccc aag ctc aag gcc   gtg ttt gac        3954
Leu Lys Thr Ile Lys Arg Leu   Pro Lys Leu Lys Ala   Val Phe Asp
    1265                1270               1275

tgt gtg gtg aac tca ctg aaa   aac gtc ctc aac atc   ctg atc gtc        3999
Cys Val Val Asn Ser Leu Lys   Asn Val Leu Asn Ile   Leu Ile Val
    1280                1285               1290

tac atg ctc ttc atg ttc atc   ttt gcc gtc att gcc   gtg cag ctc        4044
Tyr Met Leu Phe Met Phe Ile   Phe Ala Val Ile Ala   Val Gln Leu
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ttc aaa ggg aag ttc ttc tac   tgc acg gac gaa tcc   aag gag ctg        4089
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Phe Lys Gly Lys Phe Phe Tyr Cys Thr Asp Glu Ser Lys Glu Leu
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Glu Arg Asp Cys Arg Gly Gln Tyr Leu Asp Tyr Glu Lys Glu Glu
    1325            1330            1335

gtg gaa gct caa ccg agg cag tgg aag aaa tat gac ttc cac tat        4179
Val Glu Ala Gln Pro Arg Gln Trp Lys Lys Tyr Asp Phe His Tyr
    1340            1345            1350

gac aac gtg ctc tgg gct ctg cta acg ctc ttc acg gtg tcc aca        4224
Asp Asn Val Leu Trp Ala Leu Leu Thr Leu Phe Thr Val Ser Thr
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ggg gaa ggg tgg ccc atg gtg ctg aaa cac tct gtg gat gcc acc        4269
Gly Glu Gly Trp Pro Met Val Leu Lys His Ser Val Asp Ala Thr
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tac gag gag cag ggc ccg agc ccc ggg tac cgc atg gag ctc tcc        4314
Tyr Glu Glu Gln Gly Pro Ser Pro Gly Tyr Arg Met Glu Leu Ser
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atc ttc tac gtg gtc tac ttt gtg gtc ttt ccc ttc ttc ttt gtc        4359
Ile Phe Tyr Val Val Tyr Phe Val Val Phe Pro Phe Phe Phe Val
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aac atc ttc gtg gcc ttg atc atc atc acc ttc cag gag cag ggg        4404
Asn Ile Phe Val Ala Leu Ile Ile Ile Thr Phe Gln Glu Gln Gly
    1415            1420            1425

gac aag gtg atg tcc gag tgc agc ctg gag aag aac gag agg gct        4449
Asp Lys Val Met Ser Glu Cys Ser Leu Glu Lys Asn Glu Arg Ala
    1430            1435            1440

tgc atc gac ttt gcc atc agc gcc aga ccc ctg acg cgg tac atg        4494
Cys Ile Asp Phe Ala Ile Ser Ala Arg Pro Leu Thr Arg Tyr Met
    1445            1450            1455

ccc cag aac aag cag tcg ttc cag tat aag acg tgg acg ttc gtg        4539
Pro Gln Asn Lys Gln Ser Phe Gln Tyr Lys Thr Trp Thr Phe Val
    1460            1465            1470

gtg tcc cca cct ttt gag tac ttc atc atg gct atg atc gcc ctc        4584
Val Ser Pro Pro Phe Glu Tyr Phe Ile Met Ala Met Ile Ala Leu
    1475            1480            1485

aac act gtg gtg ctg atg atg aag ttc tac gat gcg ccg tac gag        4629
Asn Thr Val Val Leu Met Met Lys Phe Tyr Asp Ala Pro Tyr Glu
    1490            1495            1500

tat gag cta atg ctg aaa tgc ctg aac atc gtg ttc acg tcc atg        4674
Tyr Glu Leu Met Leu Lys Cys Leu Asn Ile Val Phe Thr Ser Met
    1505            1510            1515

ttc tcc atg gag tgt gtg ctg aag atc atc gcc ttc ggg gtg ctg        4719
Phe Ser Met Glu Cys Val Leu Lys Ile Ile Ala Phe Gly Val Leu
```

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        1520                    1525                    1530

aac tat ttc aga gat gcc tgg  aat gtc ttt gac ttt  gtc acg gtg        4764
Asn Tyr Phe Arg Asp Ala Trp  Asn Val Phe Asp Phe  Val Thr Val
    1535                    1540                    1545

ttg gga agt att act gat att  ttg gta aca gag att  gcg aac aac        4809
Leu Gly Ser Ile Thr Asp Ile  Leu Val Thr Glu Ile  Ala Asn Asn
    1550                    1555                    1560

ttc atc aac ctc agc ttc ctg  cgc ctg ttc cgg gcc  gcg cgg ctc        4854
Phe Ile Asn Leu Ser Phe Leu  Arg Leu Phe Arg Ala  Ala Arg Leu
    1565                    1570                    1575

atc aag ctg ctg cgc cag ggc  tac acc atc cgc atc  ctg ctt tgg        4899
Ile Lys Leu Leu Arg Gln Gly  Tyr Thr Ile Arg Ile  Leu Leu Trp
    1580                    1585                    1590

acc ttc gtg cag tcc ttc aag  gcg ctg ccc tac gtg  tgt ctc ctc        4944
Thr Phe Val Gln Ser Phe Lys  Ala Leu Pro Tyr Val  Cys Leu Leu
    1595                    1600                    1605

atc gcc atg ctc ttc ttc atc  tac gcc atc att ggc  atg cag gtt        4989
Ile Ala Met Leu Phe Phe Ile  Tyr Ala Ile Ile Gly  Met Gln Val
    1610                    1615                    1620

ttt ggg aac atc gcc ctg gac  gat gac acc agc atc  aac agg cac        5034
Phe Gly Asn Ile Ala Leu Asp  Asp Asp Thr Ser Ile  Asn Arg His
    1625                    1630                    1635

aat aac ttc cgg acg ttt ctg  cag gcc ttg atg ttg  ctg ttc agg        5079
Asn Asn Phe Arg Thr Phe Leu  Gln Ala Leu Met Leu  Leu Phe Arg
    1640                    1645                    1650

agc gcc acg ggg gag gcc tgg  cac gag ata atg ctg  tcg tgc ctc        5124
Ser Ala Thr Gly Glu Ala Trp  His Glu Ile Met Leu  Ser Cys Leu
    1655                    1660                    1665

agc agc cgg gcc tgc gac gag  cac tcc aat gcc agc  gag tgc ggc        5169
Ser Ser Arg Ala Cys Asp Glu  His Ser Asn Ala Ser  Glu Cys Gly
    1670                    1675                    1680

agc gac ttt gcc tac ttt tac  ttc gtc tcc ttc atc  ttc ctc tgc        5214
Ser Asp Phe Ala Tyr Phe Tyr  Phe Val Ser Phe Ile  Phe Leu Cys
    1685                    1690                    1695

tcc ttt ctg atg ttg aac ctc  ttt gtg gct gtg atc  atg gac aat        5259
Ser Phe Leu Met Leu Asn Leu  Phe Val Ala Val Ile  Met Asp Asn
    1700                    1705                    1710

ttt gag tac ctt aca cgg gac  tct tcc atc tta ggg  cct cac cac        5304
Phe Glu Tyr Leu Thr Arg Asp  Ser Ser Ile Leu Gly  Pro His His
    1715                    1720                    1725

ctg gat gag ttc atc cgg gtc  tgg gct gaa tac gac  ccg gcc gcg        5349
Leu Asp Glu Phe Ile Arg Val  Trp Ala Glu Tyr Asp  Pro Ala Ala
    1730                    1735                    1740
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tgt ggg cgc atc agt tac agt  gac atg ttt gag atg  ctg aag cac     5394
Cys Gly Arg Ile Ser Tyr Ser  Asp Met Phe Glu Met  Leu Lys His
    1745                1750                1755

atg tcc cca ccc ctg ggg ctg  ggg aag aag tgc cct  gct cga gtc     5439
Met Ser Pro Pro Leu Gly Leu  Gly Lys Lys Cys Pro  Ala Arg Val
    1760                1765                1770

gcg tac aag cgc ctg gtc cgc  atg aac atg ccc atc  tcc agt gag     5484
Ala Tyr Lys Arg Leu Val Arg  Met Asn Met Pro Ile  Ser Ser Glu
    1775                1780                1785

gac atg acg gtg cac ttc aca  tcc acg ctg atg gct  ctc att cgg     5529
Asp Met Thr Val His Phe Thr  Ser Thr Leu Met Ala  Leu Ile Arg
    1790                1795                1800

aca gcg ctg gac atc aag ctg  gca cca gct ggg acc  aag cag cac     5574
Thr Ala Leu Asp Ile Lys Leu  Ala Pro Ala Gly Thr  Lys Gln His
    1805                1810                1815

cag tgc gac gca gag ctg agg  aag gag att tcc tgt  gtg tgg gcc     5619
Gln Cys Asp Ala Glu Leu Arg  Lys Glu Ile Ser Cys  Val Trp Ala
    1820                1825                1830

aat ctg ccc cag aag acc ctg  gac tta ctg gta cca  ccc cat aag     5664
Asn Leu Pro Gln Lys Thr Leu  Asp Leu Leu Val Pro  Pro His Lys
    1835                1840                1845

cct gac gag atg acg gtg ggc  aaa gtc tat gca gct  ctg atg atc     5709
Pro Asp Glu Met Thr Val Gly  Lys Val Tyr Ala Ala  Leu Met Ile
    1850                1855                1860

ttc gac ttc tac aaa cag aac  aaa acc agc aga gac  cag act cag     5754
Phe Asp Phe Tyr Lys Gln Asn  Lys Thr Ser Arg Asp  Gln Thr Gln
    1865                1870                1875

caa gcc ccc gga ggc ctg tcc  cag ctg ggc ccc gtg  tcc ctg ttc     5799
Gln Ala Pro Gly Gly Leu Ser  Gln Leu Gly Pro Val  Ser Leu Phe
    1880                1885                1890

cac ccg ctg aag gcc acg ctg  gag cag act cag ccg  gcg ctg cgt     5844
His Pro Leu Lys Ala Thr Leu  Glu Gln Thr Gln Pro  Ala Leu Arg
    1895                1900                1905

gga gcc cgg gct ttc ctg cgg  cag aag agt tct gcc  tcc ctg agc     5889
Gly Ala Arg Ala Phe Leu Arg  Gln Lys Ser Ser Ala  Ser Leu Ser
    1910                1915                1920

aac ggc ggg gcc gta caa acc  cag gag agc ggc atc  aag gaa tcg     5934
Asn Gly Gly Ala Val Gln Thr  Gln Glu Ser Gly Ile  Lys Glu Ser
    1925                1930                1935

gtt tct tgg ggc act cag agg  acc cag gat gtg ctt  tgc gag gcc     5979
Val Ser Trp Gly Thr Gln Arg  Thr Gln Asp Val Leu  Cys Glu Ala
    1940                1945                1950
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agg gca  ccc ctg gag cgg ggc  cac tca gct gag atc  cca gtc ggg       6024
Arg Ala  Pro Leu Glu Arg Gly  His Ser Ala Glu Ile  Pro Val Gly
    1955              1960               1965

cag cct  ggg aca ctg gct gta  gat gtc cag atg cag  aac atg act       6069
Gln Pro  Gly Thr Leu Ala Val  Asp Val Gln Met Gln  Asn Met Thr
    1970              1975               1980

ctg agt  ggc cct gac gcc gag  ccg cag cca ggg ctg  gag agc cag       6114
Leu Ser  Gly Pro Asp Ala Glu  Pro Gln Pro Gly Leu  Glu Ser Gln
    1985              1990               1995

ggc cga  gcc gcc tcc atg ccc  cgc ctg gcc gca gaa  aca cag ccc       6159
Gly Arg  Ala Ala Ser Met Pro  Arg Leu Ala Ala Glu  Thr Gln Pro
    2000              2005               2010

gcg cct  gac gcc agc ccc atg  aag cgc tcc atc tcc  acg ctg gcc       6204
Ala Pro  Asp Ala Ser Pro Met  Lys Arg Ser Ile Ser  Thr Leu Ala
    2015              2020               2025

ccg cgc  ccc cac acg gcc cgg  ctc ggc agc acc gcg  ctg gac cgc       6249
Pro Arg  Pro His Thr Ala Arg  Leu Gly Ser Thr Ala  Leu Asp Arg
    2030              2035               2040

cca gcc  ccc agc cag gcc ccg  cac cat cac cac cac  cgc tgc cac       6294
Pro Ala  Pro Ser Gln Ala Pro  His His His His His  Arg Cys His
    2045              2050               2055

cgc cgc  agg gac agg aag cag  cgg tcc ctg gag aag  ggt ccc agc       6339
Arg Arg  Arg Asp Arg Lys Gln  Arg Ser Leu Glu Lys  Gly Pro Ser
    2060              2065               2070

ctg tct  gct gac aca gat ggg  gcc ccc gac agc acg  gtg ggg cca       6384
Leu Ser  Ala Asp Thr Asp Gly  Ala Pro Asp Ser Thr  Val Gly Pro
    2075              2080               2085

gga ctg  ccc acg ggg gag ggc  ccc ccc ggc tgc agg  cgg gag cgg       6429
Gly Leu  Pro Thr Gly Glu Gly  Pro Pro Gly Cys Arg  Arg Glu Arg
    2090              2095               2100

gag cgc  agg cag gag cgg ggc  cgg tcc cag gag cgg  agg cag ccc       6474
Glu Arg  Arg Gln Glu Arg Gly  Arg Ser Gln Glu Arg  Arg Gln Pro
    2105              2110               2115

tcg tcc  tcc tcc tcg gag aag  cat cgc ttc tac tcc  tgt gac cgc       6519
Ser Ser  Ser Ser Ser Glu Lys  His Arg Phe Tyr Ser  Cys Asp Arg
    2120              2125               2130

ttc ggg  ggc cgc gaa ccc cca  cag ccc aag ccc tcc  ctc agt agt       6564
Phe Gly  Gly Arg Glu Pro Pro  Gln Pro Lys Pro Ser  Leu Ser Ser
    2135              2140               2145

cac ccc  acg tcg ccg acg gcc  ggg cag gag ccg gga  ccc cac ccg       6609
His Pro  Thr Ser Pro Thr Ala  Gly Gln Glu Pro Gly  Pro His Pro
    2150              2155               2160

cag ggg  agt ggt tcg gtt cac  ggg agc ccc ctg ctg  tcc aca tct       6654
```

```
Gln Gly  Ser Gly Ser Val His  Gly Ser Pro Leu Leu  Ser Thr Ser
    2165              2170              2175

ggt gct  agc acc ccg ggc cgg  ggg cgg agg cag ctc  ccc cag acc        6699
Gly Ala  Ser Thr Pro Gly Arg  Gly Arg Arg Gln Leu  Pro Gln Thr
    2180              2185              2190

ccc ttg  acc ccc cgc ccc agc  gtc acc tac aag acg  gcc aac tcc        6744
Pro Leu  Thr Pro Arg Pro Ser  Val Thr Tyr Lys Thr  Ala Asn Ser
    2195              2200              2205

tcg cct  gtc cac ttc gcc ggg  gca ccg agc ggc ctc  ccc gcc ttc        6789
Ser Pro  Val His Phe Ala Gly  Ala Pro Ser Gly Leu  Pro Ala Phe
    2210              2215              2220

tcc ccc  ggc cgg ctc agc cgg  ggc ctc tca gaa cac  aac gcc ctg        6834
Ser Pro  Gly Arg Leu Ser Arg  Gly Leu Ser Glu His  Asn Ala Leu
    2225              2230              2235

ctg cag  agg gac ccg ctc agc  cgg ccc ctg gcg ccc  ggc tcg cgc        6879
Leu Gln  Arg Asp Pro Leu Ser  Arg Pro Leu Ala Pro  Gly Ser Arg
    2240              2245              2250

atc ggc  tcc gac ccc tac ctg  ggg cag cgg ctg gac  agc gag gcg        6924
Ile Gly  Ser Asp Pro Tyr Leu  Gly Gln Arg Leu Asp  Ser Glu Ala
    2255              2260              2265

ccc gcc  cgt gcc ctg ccc gag  gac gcg ccc gcc ttt  gag gag acc        6969
Pro Ala  Arg Ala Leu Pro Glu  Asp Ala Pro Ala Phe  Glu Glu Thr
    2270              2275              2280

gcg gcc  agc aac tcg ggc cgc  tcc tcc cgg acc tcg  tac gtg tcc        7014
Ala Ala  Ser Asn Ser Gly Arg  Ser Ser Arg Thr Ser  Tyr Val Ser
    2285              2290              2295

tca ctg  acc tcg cag ccc ccg  ccg ctg cgc cgc gtg  ccc aac ggc        7059
Ser Leu  Thr Ser Gln Pro Pro  Pro Leu Arg Arg Val  Pro Asn Gly
    2300              2305              2310

tac cac  tgc act ctg ggg ctg  ggc ggg ggc ggc cgg  gcg cgg cgc        7104
Tyr His  Cys Thr Leu Gly Leu  Gly Gly Gly Gly Arg  Ala Arg Arg
    2315              2320              2325

ggc tgc  cac cac ccc gac cgc  gac cgc cgg tgc tag ccgctgcgcg         7150
Gly Cys  His His Pro Asp Arg  Asp Arg Arg Cys
    2330              2335

cccgcccccg gcggtgggct tcatcttccg cgctgggctg cggggacgcg ggcaccgagg    7210

ccctggacgg ggcctgggcg gaggcccctg ctcccctccc cctcctccct gacagcagac    7270

ggatcaataa agccccttcc ggcgggacgc ggctgtctct gcccctgac gtgctgcctt    7330

cccaggtctc ccaccacagg ctgatcctgt gtcagagacc ccggtgtcag tgtgcagggg    7390

tgggggtgc ggggcctgtg tcggacccccc agggttaatg ggggagcgt cagtgtgtgg    7450
```

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gagcacctgt gacccgtgtt ggtgggagga gttgcactgc ctggaggcat aggggagctt     7510

aggggtctcg agggagccgg gggaggagct gaggttgctc ctggtccctg gtcgcggggc     7570

ggcaggtgga cgctggacac actcagatct ctcagtccct ccccgacccc atcagcccca     7630

acagggacca aacctggagg acgtgccggc tgctggtcta aacagaacag gaagaaaatg     7690

aggaaaccgg aaaatcagag ccg                                             7713
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<210> 42
<211> 2339
<212> PRT
<213> Oryctolagus cuniculus

<400> 42

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Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Ala Gly
1               5                  10                 15


Gly Ala Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
            20                 25                 30


Gly Pro Gly Gly Leu Pro Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
        35                 40                 45


Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
    50                 55                 60


Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65                 70                 75                 80


Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
                85                 90                 95


Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
            100                105                110


Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
        115                120                125


Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
    130                135                140


Ala Gly Ile Lys Ile Leu Ala Leu Gly Phe Val Leu His Lys Gly Ser
145                150                155                160
```

```
Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
             165              170                   175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
             180              185                   190

Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
             195              200              205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
    210              215              220

Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225              230              235              240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
             245              250              255

Ser Thr Asp Pro Asp Pro Val Gly Asp Phe Pro Cys Gly Lys Glu Ala
             260              265              270

Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp Ala
             275              280              285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
    290              295              300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305              310              315              320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
             325              330              335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
             340              345              350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
             355              360              365

Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
    370              375              380
```

```
Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385                 390             395                     400

Ala Glu Glu Asp Arg Asn Ala Glu Glu Lys Ser Pro Leu Asp Ala Val
            405                 410                 415

Leu Lys Arg Ala Ala Ala Lys Lys Ser Arg Ser Asp Leu Ile Gln Ala
            420                 425                 430

Glu Glu Gly Glu Gly Arg Leu Thr Gly Leu Cys Ala Pro Gly Ser Pro
        435                 440                 445

Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr
    450                 455                 460

Phe Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val
465                 470                 475                     480

Lys Ala Gln Ser Phe Tyr Trp Thr Val Leu Cys Val Val Ala Leu Asn
            485                 490                 495

Thr Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Gln Arg Leu Thr
            500                 505                 510

Thr Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr
            515                 520                 525

Glu Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg
    530                 535                 540

Ser Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe
545                 550                 555                     560

Glu Val Val Trp Ala Ala Val Lys Pro Gly Thr Ser Phe Gly Ile Ser
            565                 570                 575

Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr
            580                 585                 590

Trp Asn Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys
        595                 600                 605

Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe
```

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           610                    615                    620


Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Lys Asp
625             630             635                 640


Glu Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr
            645             650                 655


Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His
            660             665                 670


Gly Ile Glu Ser Gln Gly Gly Val Ser Arg Gly Met Phe Ser Ser Phe
        675             680                 685


Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val
    690             695                 700


Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr
705             710             715                 720


Lys Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu
            725             730                 735


Gln Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn
            740             745                 750


Ile Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val
        755             760                 765


Trp Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser
    770             775                 780


Cys Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Tyr
785             790             795                 800


Ala Thr Ala Arg His Leu Arg Pro Asp Val Lys Thr His Leu Asp Arg
            805             810                 815


Pro Leu Val Val Glu Pro Gly Arg Asp Ala Pro Arg Gly Pro Pro Gly
            820             825                 830


Gly Lys Ser Arg Pro Asp Gly Ser Glu Ala Pro Glu Gly Ala Asp Pro
        835             840                 845
```

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Pro Arg Arg His His Arg His Arg Asp Lys Asp Lys Ala Pro Ala Thr
    850                 855             860

Val Pro Ser Ala Gly Glu Gln Asp Arg Ala Glu Ala Leu Arg Ala Glu
865             870             875                 880

Gly Gly Glu Leu Gly Pro Arg Glu Glu Arg Gly Arg Pro Arg Arg Ser
                885             890                 895

Arg Ser Lys Glu Ala Pro Gly Ala Pro Glu Val Arg Ser Asp Arg Gly
            900             905             910

Arg Gly Pro Cys Pro Glu Gly Gly Arg Arg His His Arg Arg Gly Ser
        915             920             925

Pro Glu Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala His Arg
    930             935             940

His Gly Pro Asp Pro Gly Lys Glu Gly Pro Ala Ser Gly Thr Arg Gly
945             950             955             960

Glu Arg Arg Ala Arg His Arg Thr Gly Pro Arg Ala Cys Pro Arg Glu
            965             970             975

Ala Glu Ser Ser Glu Glu Pro Ala Arg Arg His Arg Ala Arg His Lys
            980             985             990

Ala Pro Pro Thr Gln Glu Thr Ala  Glu Lys Asp Lys Glu  Ala Ala Glu
        995             1000            1005

Lys Gly  Gly Glu Ala Thr Glu  Ala Glu Lys Asp Lys  Glu Ala Arg
    1010            1015            1020

Asn His  Gln Pro Lys Glu Leu  Pro Cys Asp Leu Glu  Ala Ile Gly
    1025            1030            1035

Met Leu  Gly Val Gly Ala Val  His Thr Leu Pro Ser  Thr Cys Leu
    1040            1045            1050

Gln Lys  Val Glu Glu Gln Pro  Glu Asp Ala Asp Asn  Gln Arg Asn
    1055            1060            1065
```

```
Val Thr  Arg Met Gly Ser Gln  Pro Pro Asp Thr Ser  Thr Thr Val
    1070              1075              1080


His Ile  Pro Val Thr Leu Thr  Gly Pro Pro Gly Glu  Thr Thr Val
    1085              1090              1095


Val Pro  Ser Gly Asn Val Asp  Leu Glu Ser Gln Ala  Glu Gly Lys
    1100              1105              1110


Lys Glu  Val Glu Thr Ser Asp  Val Met Arg Ser Gly  Pro Arg Pro
    1115              1120              1125


Ile Val  Pro Tyr Ser Ser Met  Phe Cys Leu Ser Pro  Thr Asn Leu
    1130              1135              1140


Leu Arg  Arg Cys Cys His Tyr  Ile Val Thr Met Arg  Tyr Phe Glu
    1145              1150              1155


Met Val  Ile Leu Val Val Ile  Ala Leu Ser Ser Ile  Ala Leu Ala
    1160              1165              1170


Ala Glu  Asp Pro Val Arg Thr  Asp Ser Pro Arg Asn  Asn Ala Leu
    1175              1180              1185


Lys Tyr  Met Asp Tyr Ile Phe  Thr Gly Val Phe Thr  Phe Glu Met
    1190              1195              1200


Val Ile  Lys Met Ile Asp Leu  Gly Leu Leu Leu His  Pro Gly Ala
    1205              1210              1215


Tyr Phe  Arg Asp Leu Trp Asn  Ile Leu Asp Phe Ile  Val Val Ser
    1220              1225              1230


Gly Ala  Leu Val Ala Phe Ala  Phe Ser Gly Ser Lys  Gly Lys Asp
    1235              1240              1245


Ile Ser  Thr Ile Lys Ser Leu  Arg Val Leu Arg Val  Leu Arg Pro
    1250              1255              1260


Leu Lys  Thr Ile Lys Arg Leu  Pro Lys Leu Lys Ala  Val Phe Asp
    1265              1270              1275
```

```
Cys Val  Val Asn Ser Leu Lys  Asn Val Leu Asn Ile  Leu Ile Val
    1280             1285             1290


Tyr Met  Leu Phe Met Phe Ile  Phe Ala Val Ile Ala  Val Gln Leu
    1295             1300             1305


Phe Lys  Gly Lys Phe Phe Tyr  Cys Thr Asp Glu Ser  Lys Glu Leu
    1310             1315             1320


Glu Arg  Asp Cys Arg Gly Gln  Tyr Leu Asp Tyr Glu  Lys Glu Glu
    1325             1330             1335


Val Glu  Ala Gln Pro Arg Gln  Trp Lys Lys Tyr Asp  Phe His Tyr
    1340             1345             1350


Asp Asn  Val Leu Trp Ala Leu  Leu Thr Leu Phe Thr  Val Ser Thr
    1355             1360             1365


Gly Glu  Gly Trp Pro Met Val  Leu Lys His Ser Val  Asp Ala Thr
    1370             1375             1380


Tyr Glu  Glu Gln Gly Pro Ser  Pro Gly Tyr Arg Met  Glu Leu Ser
    1385             1390             1395


Ile Phe  Tyr Val Val Tyr Phe  Val Val Phe Pro Phe  Phe Phe Val
    1400             1405             1410


Asn Ile  Phe Val Ala Leu Ile  Ile Ile Thr Phe Gln  Glu Gln Gly
    1415             1420             1425


Asp Lys  Val Met Ser Glu Cys  Ser Leu Glu Lys Asn  Glu Arg Ala
    1430             1435             1440


Cys Ile  Asp Phe Ala Ile Ser  Ala Arg Pro Leu Thr  Arg Tyr Met
    1445             1450             1455


Pro Gln  Asn Lys Gln Ser Phe  Gln Tyr Lys Thr Trp  Thr Phe Val
    1460             1465             1470


Val Ser  Pro Pro Phe Glu Tyr  Phe Ile Met Ala Met  Ile Ala Leu
    1475             1480             1485


Asn Thr  Val Val Leu Met Met  Lys Phe Tyr Asp Ala  Pro Tyr Glu
```

```
                1490                        1495                        1500


        Tyr Glu Leu Met Leu Lys Cys Leu Asn Ile Val Phe Thr Ser Met
            1505                1510                    1515


        Phe Ser Met Glu Cys Val Leu Lys Ile Ile Ala Phe Gly Val Leu
            1520                1525                    1530


        Asn Tyr Phe Arg Asp Ala Trp Asn Val Phe Asp Phe Val Thr Val
            1535                1540                    1545


        Leu Gly Ser Ile Thr Asp Ile Leu Val Thr Glu Ile Ala Asn Asn
            1550                1555                    1560


        Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu
            1565                1570                    1575


        Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp
            1580                1585                    1590


        Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu
            1595                1600                    1605


        Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val
            1610                1615                    1620


        Phe Gly Asn Ile Ala Leu Asp Asp Asp Thr Ser Ile Asn Arg His
            1625                1630                    1635


        Asn Asn Phe Arg Thr Phe Leu Gln Ala Leu Met Leu Leu Phe Arg
            1640                1645                    1650


        Ser Ala Thr Gly Glu Ala Trp His Glu Ile Met Leu Ser Cys Leu
            1655                1660                    1665


        Ser Ser Arg Ala Cys Asp Glu His Ser Asn Ala Ser Glu Cys Gly
            1670                1675                    1680


        Ser Asp Phe Ala Tyr Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys
            1685                1690                    1695


        Ser Phe Leu Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn
            1700                1705                    1710
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Phe Glu  Tyr Leu Thr Arg Asp  Ser Ser Ile Leu Gly  Pro His His
    1715                1720                1725

Leu Asp  Glu Phe Ile Arg Val  Trp Ala Glu Tyr Asp  Pro Ala Ala
    1730                1735                1740

Cys Gly  Arg Ile Ser Tyr Ser  Asp Met Phe Glu Met  Leu Lys His
    1745                1750                1755

Met Ser  Pro Pro Leu Gly Leu  Gly Lys Lys Cys Pro  Ala Arg Val
    1760                1765                1770

Ala Tyr  Lys Arg Leu Val Arg  Met Asn Met Pro Ile  Ser Ser Glu
    1775                1780                1785

Asp Met  Thr Val His Phe Thr  Ser Thr Leu Met Ala  Leu Ile Arg
    1790                1795                1800

Thr Ala  Leu Asp Ile Lys Leu  Ala Pro Ala Gly Thr  Lys Gln His
    1805                1810                1815

Gln Cys  Asp Ala Glu Leu Arg  Lys Glu Ile Ser Cys  Val Trp Ala
    1820                1825                1830      ·

Asn Leu  Pro Gln Lys Thr Leu  Asp Leu Leu Val Pro  Pro His Lys
    1835                1840                1845

Pro Asp  Glu Met Thr Val Gly  Lys Val Tyr Ala Ala  Leu Met Ile
    1850                1855                1860

Phe Asp  Phe Tyr Lys Gln Asn  Lys Thr Ser Arg Asp  Gln Thr Gln
    1865                1870                1875

Gln Ala  Pro Gly Gly Leu Ser  Gln Leu Gly Pro Val  Ser Leu Phe
    1880                1885                1890

His Pro  Leu Lys Ala Thr Leu  Glu Gln Thr Gln Pro  Ala Leu Arg
    1895                1900                1905

Gly Ala  Arg Ala Phe Leu Arg  Gln Lys Ser Ser Ala  Ser Leu Ser
    1910                1915                1920
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Asn Gly · Gly Ala Val Gln Thr  Gln Glu Ser Gly Ile  Lys Glu Ser
    1925                1930                1935

Val Ser  Trp Gly Thr Gln Arg  Thr Gln Asp Val Leu  Cys Glu Ala
    1940                1945                1950

Arg Ala  Pro Leu Glu Arg Gly  His Ser Ala Glu Ile  Pro Val Gly
    1955                1960                1965

Gln Pro  Gly Thr Leu Ala Val  Asp Val Gln Met Gln  Asn Met Thr
    1970                1975                1980

Leu Ser  Gly Pro Asp Ala Glu  Pro Gln Pro Gly Leu  Glu Ser Gln
    1985                1990                1995

Gly Arg  Ala Ala Ser Met Pro  Arg Leu Ala Ala Glu  Thr Gln Pro
    2000                2005                2010

Ala Pro  Asp Ala Ser Pro Met  Lys Arg Ser Ile Ser  Thr Leu Ala
    2015                2020                2025

Pro Arg  Pro His Thr Ala Arg  Leu Gly Ser Thr Ala  Leu Asp Arg
    2030                2035                2040

Pro Ala  Pro Ser Gln Ala Pro  His His His His His  Arg Cys His
    2045                2050                2055

Arg Arg  Arg Asp Arg Lys Gln  Arg Ser Leu Glu Lys  Gly Pro Ser
    2060                2065                2070

Leu Ser  Ala Asp Thr Asp Gly  Ala Pro Asp Ser Thr  Val Gly Pro
    2075                2080                2085

Gly Leu  Pro Thr Gly Glu Gly  Pro Pro Gly Cys Arg  Arg Glu Arg
    2090                2095                2100

Glu Arg  Arg Gln Glu Arg Gly  Arg Ser Gln Glu Arg  Arg Gln Pro
    2105                2110                2115

Ser Ser  Ser Ser Ser Glu Lys  His Arg Phe Tyr Ser  Cys Asp Arg
    2120                2125                2130
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Phe Gly  Gly Arg Glu Pro Pro  Gln Pro Lys Pro Ser  Leu Ser Ser
    2135                 2140                 2145


His Pro  Thr Ser Pro Thr Ala  Gly Gln Glu Pro Gly  Pro His Pro
    2150                 2155                 2160


Gln Gly  Ser Gly Ser Val His  Gly Ser Pro Leu Leu  Ser Thr Ser
    2165                 2170                 2175


Gly Ala  Ser Thr Pro Gly Arg  Gly Arg Arg Gln Leu  Pro Gln Thr
    2180                 2185                 2190


Pro Leu  Thr Pro Arg Pro Ser  Val Thr Tyr Lys Thr  Ala Asn Ser
    2195                 2200                 2205


Ser Pro  Val His Phe Ala Gly  Ala Pro Ser Gly Leu  Pro Ala Phe
    2210                 2215                 2220


Ser Pro  Gly Arg Leu Ser Arg  Gly Leu Ser Glu His  Asn Ala Leu
    2225                 2230                 2235


Leu Gln  Arg Asp Pro Leu Ser  Arg Pro Leu Ala Pro  Gly Ser Arg
    2240                 2245                 2250


Ile Gly  Ser Asp Pro Tyr Leu  Gly Gln Arg Leu Asp  Ser Glu Ala
    2255                 2260                 2265


Pro Ala  Arg Ala Leu Pro Glu  Asp Ala Pro Ala Phe  Glu Glu Thr
    2270                 2275                 2280


Ala Ala  Ser Asn Ser Gly Arg  Ser Ser Arg Thr Ser  Tyr Val Ser
    2285                 2290                 2295


Ser Leu  Thr Ser Gln Pro Pro  Pro Leu Arg Arg Val  Pro Asn Gly
    2300                 2305                 2310


Tyr His  Cys Thr Leu Gly Leu  Gly Gly Gly Gly Arg  Ala Arg Arg
    2315                 2320                 2325


Gly Cys  His His Pro Asp Arg  Asp Arg Arg Cys
    2330                 2335
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gagcc atg gtc cgc ttc ggg gac gag ctg ggc ggc cgc tat ggg ggc ccc   170
      Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Pro
      1   5   10   15

ggc ggt ggg gag cgg gcg cgg ggc ggc ggg gcc ggc gtt gcg ggc ggc   218
Gly Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Val Ala Gly Gly
                20   25   30

ccg ggc ccc ggg ggg ctg cag ccg ggc cag cgg gtc ctc tac aag cag   266
Pro Gly Pro Gly Gly Leu Gln Pro Gly Gln Arg Val Leu Tyr Lys Gln
            35   40   45

tcg atc gcg cag cgc gcg cgg acc atg gcg ctg tac aac ccc atc ccg   314
Ser Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro
        50   55   60

gtc aag cag aac tgc ttc acc gtc aac cgc tcg ctc ttc gtc ttc agc   362
Val Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser
    65   70   75

gag gac aac gtc gtc cgc aaa tac gcc aag cgc atc acc gag tgg cct   410
Glu Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro
80   85   90   95

ccg ttt gag tac atg att ctg gcc acc atc atc gcc aac tgt atc gtg   458
Pro Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val
                100   105   110

ctg gct ctg gag cag cac ctc cca gac gga gac aag acg ccc atg tct   506
Leu Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser
            115   120   125

gag cgg ctg gac gac acg gag ccc tac ttc atc ggc atc ttc tgc ttc   554
Glu Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe
            130   135   140

gag gct ggg atc aag atc atc gcg ctg ggc ttt gtc ttg cac aag ggc   602
Glu Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Leu His Lys Gly
        145   150   155

tcc tac ctg cgg aat ggc tgg aac gtc atg gac ttc gtg gtg gtc ctc   650
Ser Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu
160   165   170   175

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acg ggg atc ctc gcc aca gct ggc act gac ttt gat ctg cga aca ctg      698
Thr Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu
            180             185             190

cgg gct gtg cgt gta ctg agg ccc ctg aag ctg gtg tct ggg att cca      746
Arg Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro
        195             200             205

agt ttg cag gtg gtg ctc aag tcc atc atg aag gcc atg gtc ccg ctc      794
Ser Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu
        210             215             220

ctg cag att ggg ctg ctt ctc ttt ttc gcc atc ctc atg ttc gcc atc      842
Leu Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile
        225             230             235

att ggc ctc gag ttc tac atg ggc aaa ttc cac aag gct tgt ttc ccc      890
Ile Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro
240             245             250             255

aac agc aca gac gca gat ccg gtg ggt gac ttc ccg tgc ggc agg gag      938
Asn Ser Thr Asp Ala Asp Pro Val Gly Asp Phe Pro Cys Gly Arg Glu
            260             265             270

gcc ccg gcg cgg ctg tgc gag ggc gac act gag tgc cgg gag tac tgg      986
Ala Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp
        275             280             285

gcg ggc ccc aac ttc ggc atc acc aac ttc gac aac atc ctg ttc gcc      1034
Ala Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala
        290             295             300

atc ctg acg gtg ttc cag tgc atc acc atg gag ggc tgg acc gac atc      1082
Ile Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile
        305             310             315

ctc tac aac acc aac gac gcg gct ggc aac acc tgg aac tgg ctc tac      1130
Leu Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr
320             325             330             335

ttc ctg ccc ctg att atc atc ggc tcg ttc ttc atg ctc aac ctg gtg      1178
Phe Leu Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val
            340             345             350

ctg ggc gtg ctc tca gga gag ttt gcc aag gag cgt gag cgg gtg gag      1226
Leu Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu
        355             360             365

aac cgc cgg gcc ttt ctg aag ctc cgc cgg cag cag cag atc gag cgg      1274
Asn Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg
        370             375             380

gag ctc aat ggg tac ctg gag tgg atc ttc aag gcc gag gag gtc atg      1322
Glu Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met
        385             390             395
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ctg gcc gag gag gac aag aac gca gag gag aag tcc cct ctg gat gtg       1370
Leu Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val
400             405                 410                 415

ttg aag aga gca gcc acc aag aag agc cga aac gac ctg atc cac gcg       1418
Leu Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala
            420                 425                 430

gag gag gga gag gac cgc ttt gca gac ctc tgt gct gtg ggg tcc ccc       1466
Glu Glu Gly Glu Asp Arg Phe Ala Asp Leu Cys Ala Val Gly Ser Pro
            435                 440                 445

ttc gcc cga gcc agc ctc aag agt ggg aag acg gag agc tcg tca tac       1514
Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr
        450                 455                 460

ttc cgc agg aag gag aag atg ttc cgg ttc ttc atc cgg cgc ctg gtg       1562
Phe Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Leu Val
    465                 470                 475

aag gcg cag agc ttc tac tgg gtg gtg ctg tgt gtg gtg gcc ctg aac       1610
Lys Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn
480             485                 490                 495

acg ctg tgc gtg gcc atg gtg cac tac cag cag ccc cag cgg ctc acc       1658
Thr Leu Cys Val Ala Met Val His Tyr Gln Gln Pro Gln Arg Leu Thr
                500                 505                 510

acg gcg ctg tac ttt gca gag ttt gtt ttc ctg ggt ctc ttc ctc aca       1706
Thr Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr
            515                 520                 525

gag atg tcc ctg aag atg tat ggc ctg ggg ccc agg agc tac ttc cgg       1754
Glu Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg
        530                 535                 540

tcc tcc ttc aac tgc ttc gat ttc ggg gtc att gtg ggg agc att ttc       1802
Ser Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe
    545                 550                 555

gaa gtg gtc tgg gcg gcc atc aag cca gga acc tcc ttc ggc atc agt       1850
Glu Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser
560             565                 570                 575

gtg ctg cgg gcg ctg cgg ctg ctg aga atc ttc aaa gtc acc aag tac       1898
Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr
            580                 585                 590

tgg agc tcc ctg cgg aac ctg gtg gtg tcc ctg ctc aac tcc atg aag       1946
Trp Ser Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys
        595                 600                 605

tcc atc atc agc ctg ctc ttc ctg ctc ttc ctc ttc atc gtg gtc ttc       1994
Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe
        610                 615                 620

gct ctg ctg ggc atg cag ctc ttc ggg gga cag ttc aac ttc cag gat       2042
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Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp
    625             630                 635

gag act ccg aca acc aac ttt gac acc ttc cct gcc gcc atc ctc act        2090
Glu Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr
640             645                 650                 655

gtc ttc cag atc ctg acc ggg gag gac tgg aat gcg gtg atg tac cat        2138
Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His
                660                 665                 670

ggg atc gaa tca caa ggt gga gtc agc aag ggc atg ttc tcg tct gtg        2186
Gly Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Val
                675                 680                 685

tac ttc att gtc ctg acg ctg ttt ggg aac tac acc ctg ctg aac gtc        2234
Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val
            690                 695                 700

ttc ctg gcc atc gct gtg gac aac ctc gcc aat gct cag gag ctg acc        2282
Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr
    705                 710                 715

aag gac gaa gag gag atg gaa gaa gca gcc aat cag aag ctt gct ctg        2330
Lys Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu
720                 725                 730                 735

caa aag gcc aaa gaa gtg gct gaa gtc agc ccc atg tct gcc gcg aac        2378
Gln Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn
                740                 745                 750

atc tcc att gct gcc agg cag cag aac tcg gcc aag gcg cgc tcg gtg        2426
Ile Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val
                755                 760                 765

tgg gag cag cgg gcc agc cag ctg cgg ctg cag aac ctg cgg gcc agc        2474
Trp Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser
                770                 775                 780

tgt gaa gcg ctg tat agc gag atg gac ccc gag gag cgc ctg cgc ttc        2522
Cys Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Phe
    785                 790                 795

gcc act tcc cgc cac ctg cgg ccc gac atg aag acg cac ctg gac cgg        2570
Ala Thr Ser Arg His Leu Arg Pro Asp Met Lys Thr His Leu Asp Arg
800                 805                 810                 815

ccg ctt gtg gtg gag cca ggc cgg gat ggc gcg cgg ggg cct gcg ggg        2618
Pro Leu Val Val Glu Pro Gly Arg Asp Gly Ala Arg Gly Pro Ala Gly
                820                 825                 830

ggc aag gcc cgg ccc gag ggc gga gag gcc ggc gag ggt gcc gac ccg        2666
Gly Lys Ala Arg Pro Glu Gly Gly Glu Ala Gly Glu Gly Ala Asp Pro
                835                 840                 845

ccg cgc agg cac cac cgg cac cgc gac agg gac agg gac aag gcc gca        2714
Pro Arg Arg His His Arg His Arg Asp Arg Asp Arg Asp Lys Ala Ala
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                 850                   855                   860

gcc ccg gcg ggg gag cca gac agg gcg gac gcc ccg aag gcg gag ggc       2762
Ala Pro Ala Gly Glu Pro Asp Arg Ala Asp Ala Pro Lys Ala Glu Gly
        865                   870                   875

ggg gag ccg ggg gcc cgg gag gag cgg gcg cga ccg cgc cgc agc cgc       2810
Gly Glu Pro Gly Ala Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser Arg
880                   885                   890                   895

agc aag gag gcc gca ggc ccc cgc gag gcc agg agc gag cga ggc cgc       2858
Ser Lys Glu Ala Ala Gly Pro Arg Glu Ala Arg Ser Glu Arg Gly Arg
                900                   905                   910

ggg ctg ggc ccg gac ggc ggc cgg cgc cac cac cgg cgc ggc tcc ccg       2906
Gly Leu Gly Pro Asp Gly Gly Arg Arg His His Arg Arg Gly Ser Pro
                915                   920                   925

gag gag gcc gcg gag cgc gag ccc cgg cgc cac cgc gcg cac cgg cac       2954
Glu Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala His Arg His
            930                   935                   940

gcg ccg gag ccg agc agg gag ggc gcg ccc ggg agc aag ggc gag cgg       3002
Ala Pro Glu Pro Ser Arg Glu Gly Ala Pro Gly Ser Lys Gly Glu Arg
        945                   950                   955

cga gcg cgg cac cgc ggc ggc tcc cgg gcc ggg ccc cgg gag gcc gag       3050
Arg Ala Arg His Arg Gly Gly Ser Arg Ala Gly Pro Arg Glu Ala Glu
960                   965                   970                   975

agc ggc gag gag ccc tcc cgg cgg cac cga gcg cga cac aag gcg ccg       3098
Ser Gly Glu Glu Pro Ser Arg Arg His Arg Ala Arg His Lys Ala Pro
                980                   985                   990

ccc gca cac gag gag gcg gag aag gag  gcc gag gcg gag gac  agg gac      3146
Pro Ala His Glu Glu Ala Glu Lys Glu  Ala Glu Ala Glu Asp  Arg Asp
            995                   1000                  1005

aag gag ccc  cga aac cac cag ccc  agg gag tcg cac tgt  gac ctg         3191
Lys Glu Pro  Arg Asn His Gln Pro  Arg Glu Ser His Cys  Asp Leu
        1010                  1015                  1020

gag gcc agt  gtg gtc att ggt gtg  ggc cct gtg cat gcc  ctg ccc         3236
Glu Ala Ser  Val Val Ile Gly Val  Gly Pro Val His Ala  Leu Pro
        1025                  1030                  1035

agc act tgt  cta gag aag gtg gaa  gag cag cca gag gat  gca gac         3281
Ser Thr Cys  Leu Glu Lys Val Glu  Glu Gln Pro Glu Asp  Ala Asp
        1040                  1045                  1050

aat cag cgg  aat gtg act cgc atg  ggc agt cag ccc tca  gat ctg         3326
Asn Gln Arg  Asn Val Thr Arg Met  Gly Ser Gln Pro Ser  Asp Leu
        1055                  1060                  1065

agc acc gct  gtg cgt atc cca gtg  acg ctg acc ggg cct  ccc ggg         3371
Ser Thr Ala  Val Arg Ile Pro Val  Thr Leu Thr Gly Pro  Pro Gly
        1070                  1075                  1080
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gag acc acg  gtt gtt ccc agt ggt  aac gtg gac ctg gaa  agc caa        3416
Glu Thr Thr  Val Val Pro Ser Gly  Asn Val Asp Leu Glu  Ser Gln
        1085              1090              1095

gca gaa gga  aag aag gag gtg gaa  gct gat gac gtg atg  agg agt        3461
Ala Glu Gly  Lys Lys Glu Val Glu  Ala Asp Asp Val Met  Arg Ser
        1100              1105              1110

ggc ccc cga  ccc att gtc ccg tac  agc tcc atg ttc tgc  ttg agc        3506
Gly Pro Arg  Pro Ile Val Pro Tyr  Ser Ser Met Phe Cys  Leu Ser
        1115              1120              1125

ccc acc aac  ctg ctc cgc cgc ttc  tgc cac tac att gtg  acc atg        3551
Pro Thr Asn  Leu Leu Arg Arg Phe  Cys His Tyr Ile Val  Thr Met
        1130              1135              1140

cag tac ttc  gag atg gtc att ctc  gtg gtc att gcc ctg  agt agc        3596
Gln Tyr Phe  Glu Met Val Ile Leu  Val Val Ile Ala Leu  Ser Ser
        1145              1150              1155

att gcc ctg  gct gcg gag gat cct  gtg cag aca gac tcg  ccc agg        3641
Ile Ala Leu  Ala Ala Glu Asp Pro  Val Gln Thr Asp Ser  Pro Arg
        1160              1165              1170

aac aac gtg  ctg aag tac atg gac  tac atc ttc aca ggt  gtc ttc        3686
Asn Asn Val  Leu Lys Tyr Met Asp  Tyr Ile Phe Thr Gly  Val Phe
        1175              1180              1185

acc ttt gag  atg gtg ata aag atg  atc gat ttg gga ctg  ctg ctg        3731
Thr Phe Glu  Met Val Ile Lys Met  Ile Asp Leu Gly Leu  Leu Leu
        1190              1195              1200

cac ccc ggt  gcc tac ttc cgg gat  ctg tgg aac att ctg  gac ttc        3776
His Pro Gly  Ala Tyr Phe Arg Asp  Leu Trp Asn Ile Leu  Asp Phe
        1205              1210              1215

att gtg gtc  agt ggg gcc ctg gtg  gcg ttt gcc ttc tca  ggc tcc        3821
Ile Val Val  Ser Gly Ala Leu Val  Ala Phe Ala Phe Ser  Gly Ser
        1220              1225              1230

aaa ggg aaa  gac atc agc acc atc  aag tcc ctg agg gtc  ctg cgt        3866
Lys Gly Lys  Asp Ile Ser Thr Ile  Lys Ser Leu Arg Val  Leu Arg
        1235              1240              1245

gtg ctg agg  cca ctc aag acc atc  aag cgg ctg ccc aag  ctc aaa        3911
Val Leu Arg  Pro Leu Lys Thr Ile  Lys Arg Leu Pro Lys  Leu Lys
        1250              1255              1260

gct gtg ttt  gac tgt gtg gtg aac  tcc ctg aag aac gtc  ctc aac        3956
Ala Val Phe  Asp Cys Val Val Asn  Ser Leu Lys Asn Val  Leu Asn
        1265              1270              1275

atc ctg atc  gtc tac atg ctc ttc  atg ttc ata ttt gct  gtc atc        4001
Ile Leu Ile  Val Tyr Met Leu Phe  Met Phe Ile Phe Ala  Val Ile
        1280              1285              1290
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gcg gta cag   ctc ttc aag ggg aag   ttt ttc tac tgc acc   gac gag        4046
Ala Val Gln   Leu Phe Lys Gly Lys   Phe Phe Tyr Cys Thr   Asp Glu
        1295              1300                 1305

tcc aag gag   ctg gag cgg gac tgc   agg ggc cag tat ttg   gac tac        4091
Ser Lys Glu   Leu Glu Arg Asp Cys   Arg Gly Gln Tyr Leu   Asp Tyr
        1310              1315                 1320

gag aag gag   gag gtg gaa gct cag   ccg cgg cag tgg aag   aaa tac        4136
Glu Lys Glu   Glu Val Glu Ala Gln   Pro Arg Gln Trp Lys   Lys Tyr
        1325              1330                 1335

gac ttc cac   tat gac aac gtg ctg   tgg gcc ctg cta acg   ctg ttc        4181
Asp Phe His   Tyr Asp Asn Val Leu   Trp Ala Leu Leu Thr   Leu Phe
        1340              1345                 1350

act gtg tcc   acg ggc gaa ggg tgg   ccc atg gtg ctg aaa   cac tcg        4226
Thr Val Ser   Thr Gly Glu Gly Trp   Pro Met Val Leu Lys   His Ser
        1355              1360                 1365

gtg gat gcc   acc tac gag gag cag   ggc ccc agc ccc ggg   ttc cgc        4271
Val Asp Ala   Thr Tyr Glu Glu Gln   Gly Pro Ser Pro Gly   Phe Arg
        1370              1375                 1380

atg gag ctg   tcc atc ttc tat gtg   gtc tac ttc gtg gtc   ttc ccc        4316
Met Glu Leu   Ser Ile Phe Tyr Val   Val Tyr Phe Val Val   Phe Pro
        1385              1390                 1395

ttc ttc ttt   gtg aac atc ttt gtg   gcc ttg atc atc atc   acc ttc        4361
Phe Phe Phe   Val Asn Ile Phe Val   Ala Leu Ile Ile Ile   Thr Phe
        1400              1405                 1410

cag gag cag   ggg gac aaa gtc atg   tct gag tgc agc ttg   gag aag        4406
Gln Glu Gln   Gly Asp Lys Val Met   Ser Glu Cys Ser Leu   Glu Lys
        1415              1420                 1425

aac gag agg   gct tgt atc gac ttc   gcc att agc gcc aaa   ccc ctg        4451
Asn Glu Arg   Ala Cys Ile Asp Phe   Ala Ile Ser Ala Lys   Pro Leu
        1430              1435                 1440

acg cgg tac   atg ccc cag aac aag   cag tcg ttc cag tac   aag acg        4496
Thr Arg Tyr   Met Pro Gln Asn Lys   Gln Ser Phe Gln Tyr   Lys Thr
        1445              1450                 1455

tgg acg ttc   gtg gtc tca cca ccc   ttt gag tat ttc atc   atg gcc        4541
Trp Thr Phe   Val Val Ser Pro Pro   Phe Glu Tyr Phe Ile   Met Ala
        1460              1465                 1470

atg ata gcc   ctc aac aca gtg gtg   ctg atg atg aag ttc   tac gat        4586
Met Ile Ala   Leu Asn Thr Val Val   Leu Met Met Lys Phe   Tyr Asp
        1475              1480                 1485

gcg ccc tac   gag tac gaa ctg atg   ttg aag tgt ctg aac   atc gtg        4631
Ala Pro Tyr   Glu Tyr Glu Leu Met   Leu Lys Cys Leu Asn   Ile Val
        1490              1495                 1500

ttc acg tcc   atg ttc tcc atg gag   tgt gtg ctc aag gtc   atc gcc        4676
```

```
Phe Thr Ser  Met Phe Ser Met Glu  Cys Val Leu Lys Val  Ile Ala
        1505              1510               1515

ttt gga gtg  ctg aac tat ttc aga  gac gcc tgg aat gtc  ttt gac    4721
Phe Gly Val  Leu Asn Tyr Phe Arg  Asp Ala Trp Asn Val  Phe Asp
        1520              1525               1530

ttt gtc act  gtg ttg gga agt att  act gat att tta gta  aca gag    4766
Phe Val Thr  Val Leu Gly Ser Ile  Thr Asp Ile Leu Val  Thr Glu
        1535              1540               1545

att gcg aac  aac ttc atc aac ctc  agc ttc ctc cgc ctc  ttc cgt    4811
Ile Ala Asn  Asn Phe Ile Asn Leu  Ser Phe Leu Arg Leu  Phe Arg
        1550              1555               1560

gct gcc cga  ctc atc aag ctg ctc  cgc caa ggc tac acc  atc cgc    4856
Ala Ala Arg  Leu Ile Lys Leu Leu  Arg Gln Gly Tyr Thr  Ile Arg
        1565              1570               1575

att ctg ctc  tgg acc ttc gtc cag  tcc ttc aag gcc ctg  ccc tat    4901
Ile Leu Leu  Trp Thr Phe Val Gln  Ser Phe Lys Ala Leu  Pro Tyr
        1580              1585               1590

gtg tgc ctg  ctc atc gcc atg ctg  ttc ttc atc tac gcc  atc atc    4946
Val Cys Leu  Leu Ile Ala Met Leu  Phe Phe Ile Tyr Ala  Ile Ile
        1595              1600               1605

ggc atg cag  gtg ttt gga aac att  gct ctg gat gac gac  acc agc    4991
Gly Met Gln  Val Phe Gly Asn Ile  Ala Leu Asp Asp Asp  Thr Ser
        1610              1615               1620

atc aac cgt  cac aat aac ttt cgg  aca ttt ctt cag gcc  ttg atg    5036
Ile Asn Arg  His Asn Asn Phe Arg  Thr Phe Leu Gln Ala  Leu Met
        1625              1630               1635

ctg ctc ttc  agg agt gcc acc ggg  gag gcc tgg cat gag  atc atg    5081
Leu Leu Phe  Arg Ser Ala Thr Gly  Glu Ala Trp His Glu  Ile Met
        1640              1645               1650

ctg tcc tgc  ctc agc agt cgg gcc  tgt gat gag ctc gcc  aat gcc    5126
Leu Ser Cys  Leu Ser Ser Arg Ala  Cys Asp Glu Leu Ala  Asn Ala
        1655              1660               1665

acg gag tgt  ggg agt gac ttc gcc  tac ttc tac ttt gtc  tcc ttc    5171
Thr Glu Cys  Gly Ser Asp Phe Ala  Tyr Phe Tyr Phe Val  Ser Phe
        1670              1675               1680

atc ttc ctt  tgc tcc ttt ctg atg  ttg aac ctc ttt gtg  gct gtg    5216
Ile Phe Leu  Cys Ser Phe Leu Met  Leu Asn Leu Phe Val  Ala Val
        1685              1690               1695

atc atg gac  aat ttt gag tac ctt  acg cgg gac tct tcc  atc cta    5261
Ile Met Asp  Asn Phe Glu Tyr Leu  Thr Arg Asp Ser Ser  Ile Leu
        1700              1705               1710

ggg cct cac  cac ctg gac gaa ttc  atc cgg gtc tgg gcc  gag tac    5306
Gly Pro His  His Leu Asp Glu Phe  Ile Arg Val Trp Ala  Glu Tyr
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         1715                    1720                    1725

gac ccg gct  gcg tgt ggg cgc atc  agt tac aat gac atg  ttt gag      5351
Asp Pro Ala  Ala Cys Gly Arg Ile  Ser Tyr Asn Asp Met  Phe Glu
         1730              .       1735                  1740

atg ctg aaa  cac atg tcc ccg ccc  ctg ggg ctg ggg aag  aaa tgc      5396
Met Leu Lys  His Met Ser Pro Pro  Leu Gly Leu Gly Lys  Lys Cys
         1745                  1750                  1755

cct gct cgt  gtt gcg tac aag cgc  ctg gtt cgt atg aac  atg ccc      5441
Pro Ala Arg  Val Ala Tyr Lys Arg  Leu Val Arg Met Asn  Met Pro
         1760                  1765                  1770

atc tcc aat  gac gac atg acc gtc  cac ttc aca tcc acg  ctg atg      5486
Ile Ser Asn  Asp Asp Met Thr Val  His Phe Thr Ser Thr  Leu Met
         1775                  1780                  1785

gcc ctc atc  cgg act gca ttg gag  atc aag ctg gct cca  gct ggc      5531
Ala Leu Ile  Arg Thr Ala Leu Glu  Ile Lys Leu Ala Pro  Ala Gly
         1790                  1795                  1800

acg aag cag  cat cag tgt gac gca  gag ctg agg aag gag  atc tcc      5576
Thr Lys Gln  His Gln Cys Asp Ala  Glu Leu Arg Lys Glu  Ile Ser
         1805                  1810                  1815

tcc gtg tgg  gcc aat ctg ccc cag  aag acc ctg gac tta  ctg gtg      5621
Ser Val Trp  Ala Asn Leu Pro Gln  Lys Thr Leu Asp Leu  Leu Val
         1820                  1825                  1830

cca ccc cat  aaa ccc gac gag atg  acg gtg ggg aag gtg  tac gca      5666
Pro Pro His  Lys Pro Asp Glu Met  Thr Val Gly Lys Val  Tyr Ala
         1835                  1840                  1845

gct ctg atg  ata ttc gac ttc tac  aaa cag aac aaa acc  acc aga      5711
Ala Leu Met  Ile Phe Asp Phe Tyr  Lys Gln Asn Lys Thr  Thr Arg
         1850                  1855                  1860

gac cag att  cac caa gct cct gga  ggc ctg gcc cag atg  ggc ccc      5756
Asp Gln Ile  His Gln Ala Pro Gly  Gly Leu Ala Gln Met  Gly Pro
         1865                  1870                  1875

gtg tcc ctg  ttc cac ccc ctg aag  gcc acg ctg gag cag  act cag      5801
Val Ser Leu  Phe His Pro Leu Lys  Ala Thr Leu Glu Gln  Thr Gln
         1880                  1885                  1890

ccg gct gtg  ctc cga gga gcc cgc  gtt ttc ctt cgg cag  aag agc      5846
Pro Ala Val  Leu Arg Gly Ala Arg  Val Phe Leu Arg Gln  Lys Ser
         1895                  1900                  1905

tcg gcc tcc  ctc agc aac ggt ggg  gca gta caa acc caa  gag ggc      5891
Ser Ala Ser  Leu Ser Asn Gly Gly  Ala Val Gln Thr Gln  Glu Gly
         1910                  1915                  1920

ggc atc aag  gag tct gtc tcc tgg  ggc act cag agg acc  cag gag      5936
Gly Ile Lys  Glu Ser Val Ser Trp  Gly Thr Gln Arg Thr  Gln Glu
         1925                  1930                  1935
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gtc ccc tgc  gag gtg agg aca ccc  ctg gag cgt ggc cac  tcc aca    5981
Val Pro Cys  Glu Val Arg Thr Pro  Leu Glu Arg Gly His  Ser Thr
        1940                1945                1950

gag atc ccg  gtg cag aca gga aaa  ccg gct gtg gac gtc  cag atg    6026
Glu Ile Pro  Val Gln Thr Gly Lys  Pro Ala Val Asp Val  Gln Met
        1955                1960                1965

cag agc atg  gtc ctg aga ggc cct  gac ggg gag ccc caa  cct ggg    6071
Gln Ser Met  Val Leu Arg Gly Pro  Asp Gly Glu Pro Gln  Pro Gly
        1970                1975                1980

ctg gag agc  cag ggc cga gca gct  tcc atg ccc cgc ctg  gca gca    6116
Leu Glu Ser  Gln Gly Arg Ala Ala  Ser Met Pro Arg Leu  Ala Ala
        1985                1990                1995

gag act cag  cca ccc cca gat gcc  agc ccc atg aag cgc  tcc atc    6161
Glu Thr Gln  Pro Pro Pro Asp Ala  Ser Pro Met Lys Arg  Ser Ile
        2000                2005                2010

tcc aca ctg  gca ccc cag agg ccc  cac gtg gct cat ctg  tgc acc    6206
Ser Thr Leu  Ala Pro Gln Arg Pro  His Val Ala His Leu  Cys Thr
        2015                2020                2025

gcg gcc ctg  gac cgc gct cca gcc  agc cag gcc gcc ccc  ccc cac    6251
Ala Ala Leu  Asp Arg Ala Pro Ala  Ser Gln Ala Ala Pro  Pro His
        2030                2035                2040

cac cac cgc  tgc cat cgc cgc agg  gac cgg aag cag aag  tcc ctg    6296
His His Arg  Cys His Arg Arg Arg  Asp Arg Lys Gln Lys  Ser Leu
        2045                2050                2055

gag aag ggg  ccc ggc ctg tct gca  gac aca gat ggc gcg  ccc tac    6341
Glu Lys Gly  Pro Gly Leu Ser Ala  Asp Thr Asp Gly Ala  Pro Tyr
        2060                2065                2070

agc acc gcg  ggg ccg ggc ccc ccg  ccg ccc cca ggg gat  ggg gca    6386
Ser Thr Ala  Gly Pro Gly Pro Pro  Pro Pro Pro Gly Asp  Gly Ala
        2075                2080                2085

gca ggc tgc  cgg cgg gag cgc agg  cag gag cgg ggc cgg  tcc cag    6431
Ala Gly Cys  Arg Arg Glu Arg Arg  Gln Glu Arg Gly Arg  Ser Gln
        2090                2095                2100

gag cgg agg  cag ccc tcc tcc tct  tcc tct gag aag cag  cgc ttc    6476
Glu Arg Arg  Gln Pro Ser Ser Ser  Ser Ser Glu Lys Gln  Arg Phe
        2105                2110                2115

tac tcc tgt  gac cgc ttt ggg ggc  cgt gag ccc ccg cag  ccc aag    6521
Tyr Ser Cys  Asp Arg Phe Gly Gly  Arg Glu Pro Pro Gln  Pro Lys
        2120                2125                2130

ccc tct ctc  agc agc cat ccc acg  tcg ccc acg gcc ggg  cag gag    6566
Pro Ser Leu  Ser Ser His Pro Thr  Ser Pro Thr Ala Gly  Gln Glu
        2135                2140                2145
```

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cca gga ccc  ccg aga cag ggt agc  ggc tcc gtg aac ggg  agc ccc        6611
Pro Gly Pro  Pro Arg Gln Gly Ser  Gly Ser Val Asn Gly  Ser Pro
        2150              2155                   2160


ctg ctg tcg  aca tct ggt gct agc  acc cct ggc cgc ggc  ggg cgg        6656
Leu Leu Ser  Thr Ser Gly Ala Ser  Thr Pro Gly Arg Gly  Gly Arg
        2165              2170                   2175


agg cag ctc  ccc cag acc ccg ctg  acc ccc cgt ccc agc  atc acc        6701
Arg Gln Leu  Pro Gln Thr Pro Leu  Thr Pro Arg Pro Ser  Ile Thr
        2180              2185                   2190


tat aag acg  gcc aac tcc tca cct  gtc cac ttt gcc ggg  gct cag        6746
Tyr Lys Thr  Ala Asn Ser Ser Pro  Val His Phe Ala Gly  Ala Gln
        2195              2200                   2205


acc agc ctc  cct gcc ttt tcc ccc  ggc cgg ctt agc cgt  ggc ctt        6791
Thr Ser Leu  Pro Ala Phe Ser Pro  Gly Arg Leu Ser Arg  Gly Leu
        2210              2215                   2220


tcg gaa cac  aac gcc ctg ctc cag  aga gac ccc ctc agc  cag ccg        6836
Ser Glu His  Asn Ala Leu Leu Gln  Arg Asp Pro Leu Ser  Gln Pro
        2225              2230                   2235


ctg gcc ccc  agc tct cgg att ggc  tcc gac cct tac ctg  ggg cag        6881
Leu Ala Pro  Ser Ser Arg Ile Gly  Ser Asp Pro Tyr Leu  Gly Gln
        2240              2245                   2250


cgt ctg gac  agt gag gct gcg gcc  cgc acc cag ctt gag  gac acg        6926
Arg Leu Asp  Ser Glu Ala Ala Ala  Arg Thr Gln Leu Glu  Asp Thr
        2255              2260                   2265


ctc acc ttc  gag gag gcc gtg gcc  acc aac tcg ggc cgc  tcc tcc        6971
Leu Thr Phe  Glu Glu Ala Val Ala  Thr Asn Ser Gly Arg  Ser Ser
        2270              2275                   2280


cgg act tcc  tac gtg tcc tcc ctg  acc tcg cag tcc cac  ccc ctc        7016
Arg Thr Ser  Tyr Val Ser Ser Leu  Thr Ser Gln Ser His  Pro Leu
        2285              2290                   2295


cgc cgg gtg  ccc aac ggc tac cac  tgc act ctg ggg ctc  agc tcg        7061
Arg Arg Val  Pro Asn Gly Tyr His  Cys Thr Leu Gly Leu  Ser Ser
        2300              2305                   2310


ggc ggg ggc  ggc cgg ggg cgg cac  agc tac cac cac cct  gac caa        7106
Gly Gly Gly  Gly Arg Gly Arg His  Ser Tyr His His Pro  Asp Gln
        2315              2320                   2325


gac cac tgg  tgc tag                                                   7121
Asp His Trp  Cys
        2330
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<210> 44
<211> 2331
<212> PRT
<213> Bos taurus

<400> 44

Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Pro Gly
1   5   10   15

Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Val Ala Gly Gly Pro
            20   25   30

Gly Pro Gly Gly Leu Gln Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
        35   40   45

Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
    50   55   60

Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
65   70   75   80

Asp Asn Val Val Arg Lys Tyr Ala Lys Arg Ile Thr Glu Trp Pro Pro
            85   90   95

Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val Leu
        100   105   110

Ala Leu Glu Gln His Leu Pro Asp Gly Asp Lys Thr Pro Met Ser Glu
        115   120   125

Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu
    130   135   140

Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Val Leu His Lys Gly Ser
145   150   155   160

Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val Val Leu Thr
            165   170   175

Gly Ile Leu Ala Thr Ala Gly Thr Asp Phe Asp Leu Arg Thr Leu Arg
        180   185   190

Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser
        195   200   205

Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu
        210   215   220

```
Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile
225             230             235             240

Gly Leu Glu Phe Tyr Met Gly Lys Phe His Lys Ala Cys Phe Pro Asn
                245             250             255

Ser Thr Asp Ala Asp Pro Val Gly Asp Phe Pro Cys Gly Arg Glu Ala
            260             265             270

Pro Ala Arg Leu Cys Glu Gly Asp Thr Glu Cys Arg Glu Tyr Trp Ala
            275             280             285

Gly Pro Asn Phe Gly Ile Thr Asn Phe Asp Asn Ile Leu Phe Ala Ile
    290             295             300

Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Ile Leu
305             310             315             320

Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
            325             330             335

Leu Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
            340             345             350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
            355             360             365

Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
    370             375             380

Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385             390             395             400

Ala Glu Glu Asp Lys Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
            405             410             415

Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
            420             425             430

Glu Gly Glu Asp Arg Phe Ala Asp Leu Cys Ala Val Gly Ser Pro Phe
    435             440             445
```

```
Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
    450             455             460

Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Leu Val Lys
465             470             475             480

Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
            485             490             495

Leu Cys Val Ala Met Val His Tyr Gln Gln Pro Gln Arg Leu Thr Thr
            500             505             510

Ala Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
        515             520             525

Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
    530             535             540

Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Ile Phe Glu
545             550             555             560

Val Val Trp Ala Ala Ile Lys Pro Gly Thr Ser Phe Gly Ile Ser Val
            565             570             575

Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
        580             585             590

Ser Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
    595             600             605

Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
    610             615             620

Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
625             630             635             640

Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
            645             650             655

Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
        660             665             670
```

Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Val Tyr
        675   680   685

Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
        690   695   700

Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
705   710   715   720

Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
                725   730   735

Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
                740   745   750

Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val Trp
        755   760   765

Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys
        770   775   780

Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Phe Ala
785   790   795   800

Thr Ser Arg His Leu Arg Pro Asp Met Lys Thr His Leu Asp Arg Pro
                805   810   815

Leu Val Val Glu Pro Gly Arg Asp Gly Ala Arg Gly Pro Ala Gly Gly
                820   825   830

Lys Ala Arg Pro Glu Gly Gly Glu Ala Gly Glu Gly Ala Asp Pro Pro
                835   840   845

Arg Arg His His Arg His Arg Asp Arg Asp Arg Asp Lys Ala Ala Ala
        350   855   860

Pro Ala Gly Glu Pro Asp Arg Ala Asp Ala Pro Lys Ala Glu Gly Gly
865   870   875   880

Glu Pro Gly Ala Arg Glu Glu Arg Ala Arg Pro Arg Arg Ser Arg Ser
                885   890   895

Lys Glu Ala Ala Gly Pro Arg Glu Ala Arg Ser Glu Arg Gly Arg Gly

900   905   910

Leu Gly Pro Asp Gly Gly Arg Arg His His Arg Arg Gly Ser Pro Glu
        915   920   925

Glu Ala Ala Glu Arg Glu Pro Arg Arg His Arg Ala His Arg His Ala
        930   935   940

Pro Glu Pro Ser Arg Glu Gly Ala Pro Gly Ser Lys Gly Glu Arg Arg
945   950   955   960

Ala Arg His Arg Gly Gly Ser Arg Ala Gly Pro Arg Glu Ala Glu Ser
            965   970   975

Gly Glu Glu Pro Ser Arg Arg His Arg Ala Arg His Lys Ala Pro Pro
            980   985   990

Ala His Glu Glu Ala Glu Lys Glu Ala Glu Ala Glu Asp Arg Asp Lys
        995   1000   1005

Glu Pro Arg Asn His Gln Pro Arg Glu Ser His Cys Asp Leu Glu
    1010   1015   1020

Ala Ser Val Val Ile Gly Val Gly Pro Val His Ala Leu Pro Ser
    1025   1030   1035

Thr Cys Leu Glu Lys Val Glu Glu Gln Pro Glu Asp Ala Asp Asn
    1040   1045   1050

Gln Arg Asn Val Thr Arg Met Gly Ser Gln Pro Ser Asp Leu Ser
    1055   1060   1065

Thr Ala Val Arg Ile Pro Val Thr Leu Thr Gly Pro Pro Gly Glu
    1070   1075   1080

Thr Thr Val Val Pro Ser Gly Asn Val Asp Leu Glu Ser Gln Ala
    1085   1090   1095

Glu Gly Lys Lys Glu Val Glu Ala Asp Asp Val Met Arg Ser Gly
    1100   1105   1110

Pro Arg Pro Ile Val Pro Tyr Ser Ser Met Phe Cys Leu Ser Pro
    1115   1120   1125

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Thr Asn  Leu Leu Arg Arg Phe  Cys His Tyr Ile Val  Thr Met Gln
    1130             1135              1140

Tyr Phe  Glu Met Val Ile Leu  Val Val Ile Ala Leu  Ser Ser Ile
    1145             1150              1155

Ala Leu  Ala Ala Glu Asp Pro  Val Gln Thr Asp Ser  Pro Arg Asn
    1160             1165              1170

Asn Val  Leu Lys Tyr Met Asp  Tyr Ile Phe Thr Gly  Val Phe Thr
    1175             1180              1185

Phe Glu  Met Val Ile Lys Met  Ile Asp Leu Gly Leu  Leu Leu His
    1190             1195              1200

Pro Gly  Ala Tyr Phe Arg Asp  Leu Trp Asn Ile Leu  Asp Phe Ile
    1205             1210              1215

Val Val  Ser Gly Ala Leu Val  Ala Phe Ala Phe Ser  Gly Ser Lys
    1220             1225              1230

Gly Lys  Asp Ile Ser Thr Ile  Lys Ser Leu Arg Val  Leu Arg Val
    1235             1240              1245

Leu Arg  Pro Leu Lys Thr Ile  Lys Arg Leu Pro Lys  Leu Lys Ala
    1250             1255              1260

Val Phe  Asp Cys Val Val Asn  Ser Leu Lys Asn Val  Leu Asn Ile
    1265             1270              1275

Leu Ile  Val Tyr Met Leu Phe  Met Phe Ile Phe Ala  Val Ile Ala
    1280             1285              1290

Val Gln  Leu Phe Lys Gly Lys  Phe Phe Tyr Cys Thr  Asp Glu Ser
    1295             1300              1305

Lys Glu  Leu Glu Arg Asp Cys  Arg Gly Gln Tyr Leu  Asp Tyr Glu
    1310             1315              1320

Lys Glu  Glu Val Glu Ala Gln  Pro Arg Gln Trp Lys  Lys Tyr Asp
    1325             1330              1335
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Phe His  Tyr Asp Asn Val Leu  Trp Ala Leu Leu Thr  Leu Phe Thr
    1340                 1345                 1350

Val Ser  Thr Gly Glu Gly Trp  Pro Met Val Leu Lys  His Ser Val
    1355                 1360                 1365

Asp Ala  Thr Tyr Glu Glu Gln  Gly Pro Ser Pro Gly  Phe Arg Met
    1370                 1375                 1380

Glu Leu  Ser Ile Phe Tyr Val  Val Tyr Phe Val Val  Phe Pro Phe
    1385                 1390                 1395

Phe Phe  Val Asn Ile Phe Val  Ala Leu Ile Ile Ile  Thr Phe Gln
    1400                 1405                 1410

Glu Gln  Gly Asp Lys Val Met  Ser Glu Cys Ser Leu  Glu Lys Asn
    1415                 1420                 1425

Glu Arg  Ala Cys Ile Asp Phe  Ala Ile Ser Ala Lys  Pro Leu Thr
    1430                 1435                 1440

Arg Tyr  Met Pro Gln Asn Lys  Gln Ser Phe Gln Tyr  Lys Thr Trp
    1445                 1450                 1455

Thr Phe  Val Val Ser Pro Pro  Phe Glu Tyr Phe Ile  Met Ala Met
    1460                 1465                 1470

Ile Ala  Leu Asn Thr Val Val  Leu Met Met Lys Phe  Tyr Asp Ala
    1475                 1480                 1485

Pro Tyr  Glu Tyr Glu Leu Met  Leu Lys Cys Leu Asn  Ile Val Phe
    1490                 1495                 1500

Thr Ser  Met Phe Ser Met Glu  Cys Val Leu Lys Val  Ile Ala Phe
    1505                 1510                 1515

Gly Val  Leu Asn Tyr Phe Arg  Asp Ala Trp Asn Val  Phe Asp Phe
    1520                 1525                 1530

Val Thr  Val Leu Gly Ser Ile  Thr Asp Ile Leu Val  Thr Glu Ile
    1535                 1540                 1545
```

```
Ala Asn  Asn Phe Ile Asn Leu  Ser Phe Leu Arg Leu  Phe Arg Ala
    1550             1555             1560

Ala Arg  Leu Ile Lys Leu Leu  Arg Gln Gly Tyr Thr  Ile Arg Ile
    1565             1570             1575

Leu Leu  Trp Thr Phe Val Gln  Ser Phe Lys Ala Leu  Pro Tyr Val
    1580             1585             1590

Cys Leu  Leu Ile Ala Met Leu  Phe Phe Ile Tyr Ala  Ile Ile Gly
    1595             1600             1605

Met Gln  Val Phe Gly Asn Ile  Ala Leu Asp Asp Asp  Thr Ser Ile
    1610             1615             1620

Asn Arg  His Asn Asn Phe Arg  Thr Phe Leu Gln Ala  Leu Met Leu
    1625             1630             1635

Leu Phe  Arg Ser Ala Thr Gly  Glu Ala Trp His Glu  Ile Met Leu
    1640             1645             1650

Ser Cys  Leu Ser Ser Arg Ala  Cys Asp Glu Leu Ala  Asn Ala Thr
    1655             1660             1665

Glu Cys  Gly Ser Asp Phe Ala  Tyr Phe Tyr Phe Val  Ser Phe Ile
    1670             1675             1680

Phe Leu  Cys Ser Phe Leu Met  Leu Asn Leu Phe Val  Ala Val Ile
    1685             1690             1695

Met Asp  Asn Phe Glu Tyr Leu  Thr Arg Asp Ser Ser  Ile Leu Gly
    1700             1705             1710

Pro His  His Leu Asp Glu Phe  Ile Arg Val Trp Ala  Glu Tyr Asp
    1715             1720             1725

Pro Ala  Ala Cys Gly Arg Ile  Ser Tyr Asn Asp Met  Phe Glu Met
    1730             1735             1740

Leu Lys  His Met Ser Pro Pro  Leu Gly Leu Gly Lys  Lys Cys Pro
    1745             1750             1755

Ala Arg  Val Ala Tyr Lys Arg  Leu Val Arg Met Asn  Met Pro Ile
```

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          1760                   1765                    1770


Ser Asn  Asp Asp Met Thr Val  His Phe Thr Ser Thr  Leu Met Ala
    1775                1780                1785


Leu Ile  Arg Thr Ala Leu Glu  Ile Lys Leu Ala Pro  Ala Gly Thr
    1790                1795                1800


Lys Gln  His Gln Cys Asp Ala  Glu Leu Arg Lys Glu  Ile Ser Ser
    1805                1810                1815


Val Trp  Ala Asn Leu Pro Gln  Lys Thr Leu Asp Leu  Leu Val Pro
    1820                1825                1830


Pro His  Lys Pro Asp Glu Met  Thr Val Gly Lys Val  Tyr Ala Ala
    1835                1840                1845


Leu Met  Ile Phe Asp Phe Tyr  Lys Gln Asn Lys Thr  Thr Arg Asp
    1850                1855                1860


Gln Ile  His Gln Ala Pro Gly  Gly Leu Ala Gln Met  Gly Pro Val
    1865                1870                1875


Ser Leu  Phe His Pro Leu Lys  Ala Thr Leu Glu Gln  Thr Gln Pro
    1880                1885                1890


Ala Val  Leu Arg Gly Ala Arg  Val Phe Leu Arg Gln  Lys Ser Ser
    1895                1900                1905


Ala Ser  Leu Ser Asn Gly Gly  Ala Val Gln Thr Gln  Glu Gly Gly
    1910                1915                1920


Ile Lys  Glu Ser Val Ser Trp  Gly Thr Gln Arg Thr  Gln Glu Val
    1925                1930                1935


Pro Cys  Glu Val Arg Thr Pro  Leu Glu Arg Gly His  Ser Thr Glu
    1940                1945                1950


Ile Pro  Val Gln Thr Gly Lys  Pro Ala Val Asp Val  Gln Met Gln
    1955                1960                1965


Ser Met  Val Leu Arg Gly Pro  Asp Gly Glu Pro Gln  Pro Gly Leu
    1970                1975                1980
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Glu Ser Gln Gly Arg Ala Ala Ser Met Pro Arg Leu Ala Ala Glu
    1985   1990   1995

Thr Gln Pro Pro Pro Asp Ala Ser Pro Met Lys Arg Ser Ile Ser
    2000   2005   2010

Thr Leu Ala Pro Gln Arg Pro His Val Ala His Leu Cys Thr Ala
    2015   2020   2025

Ala Leu Asp Arg Ala Pro Ala Ser Gln Ala Ala Pro Pro His His
    2030   2035   2040

His Arg Cys His Arg Arg Arg Asp Arg Lys Gln Lys Ser Leu Glu
    2045   2050   2055

Lys Gly Pro Gly Leu Ser Ala Asp Thr Asp Gly Ala Pro Tyr Ser
    2060   2065   2070

Thr Ala Gly Pro Gly Pro Pro Pro Pro Pro Gly Asp Gly Ala Ala
    2075   2080   2085

Gly Cys Arg Arg Glu Arg Arg Gln Glu Arg Gly Arg Ser Gln Glu
    2090   2095   2100

Arg Arg Gln Pro Ser Ser Ser Ser Ser Glu Lys Gln Arg Phe Tyr
    2105   2110   2115

Ser Cys Asp Arg Phe Gly Gly Arg Glu Pro Pro Gln Pro Lys Pro
    2120   2125   2130

Ser Leu Ser Ser His Pro Thr Ser Pro Thr Ala Gly Gln Glu Pro
    2135   2140   2145

Gly Pro Pro Arg Gln Gly Ser Gly Ser Val Asn Gly Ser Pro Leu
    2150   2155   2160

Leu Ser Thr Ser Gly Ala Ser Thr Pro Gly Arg Gly Gly Arg Arg
    2165   2170   2175

Gln Leu Pro Gln Thr Pro Leu Thr Pro Arg Pro Ser Ile Thr Tyr
    2180   2185   2190

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Lys Thr  Ala Asn Ser Ser Pro  Val His Phe Ala Gly  Ala Gln Thr
    2195                2200                2205


Ser Leu  Pro Ala Phe Ser Pro  Gly Arg Leu Ser Arg  Gly Leu Ser
    2210                2215                2220


Glu His  Asn Ala Leu Leu Gln  Arg Asp Pro Leu Ser  Gln Pro Leu
    2225                2230                2235


Ala Pro  Ser Ser Arg Ile Gly  Ser Asp Pro Tyr Leu  Gly Gln Arg
    2240                2245                2250


Leu Asp  Ser Glu Ala Ala Ala  Arg Thr Gln Leu Glu  Asp Thr Leu
    2255                2260                2265


Thr Phe  Glu Glu Ala Val Ala  Thr Asn Ser Gly Arg  Ser Ser Arg
    2270                2275                2280


Thr Ser  Tyr Val Ser Ser Leu  Thr Ser Gln Ser His  Pro Leu Arg
    2285                2290                2295


Arg Val  Pro Asn Gly Tyr His  Cys Thr Leu Gly Leu  Ser Ser Gly
    2300                2305                2310


Gly Gly  Gly Arg Gly Arg His  Ser Tyr His His Pro  Asp Gln Asp
    2315                2320                2325


His Trp  Cys
    2330



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       norvegicus

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Lys

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Ala Pro Pro Val Gly Leu Gly Lys Asn Cys Pro Arg Arg Leu Ala Tyr
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1   5   10   15

Ser Pro Pro Leu Gly Leu Gly Lys Lys Cys Pro Ala Arg Val Ala Tyr
            20   25   30